THE
INDIAN RURAL PROBLEM

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INTRODUCTION TO THE FIRST EDITION

It is not difficult to say what the Indian Rural Problem is. At bottom it is none other than that of raising the standard of life of the rural masses. During the last twenty-five years, there has been a considerable growth of industries in India, but this has made hardly any impression on our standard of life, more especially in the rural areas. Industrialism in this country has been an exotic growth, super-imposed upon an unprepared and undeveloped economic structure. Our industrial progress has been slow and lopsided; the few large-scale industries we have are concentrated in the cities. We have failed to develop the basic and key industries which are the very corner-stone of the industrial edifice in the advanced countries of the world, and the need for developing small-scale and cottage industries has been realised only lately and slowly. As to agriculture, it remains as backward and primitive as ever. The productivity of agriculture has not increased: in certain respects, it is possible, it has actually decreased. As India lives in her villages, and agriculture is the very backbone of her economic life, we must devote all our efforts to solve the rural problem. The objective is to increase the income of the rural population so as to improve its standards of nutrition, sanitation, housing and education, and this presupposes certain social, political and administrative changes. For one who knows our rural life and its problems, this is no easy task. Agriculture, it has often been said, is not, for our farmers, a business proposition, but a way of life. A way of life cannot be changed by half-measures and piecemeal efforts. It presupposes an all-round, well-planned and co-ordinated effort on the part of the authorities responsible for the well-being of the people.

The root cause of the low productivity of Indian agriculture is our failure to apply modern science to it, but before this could be done, extensive measures for the reform of the land system are necessary. The great economic transformation in European countries during the eighteenth and nineteenth centuries was brought about by the adoption of a new system of crop rotation, better methods of sowing and reaping, the use of chemical manures, and, in general, the application of new scientific knowledge to

all the related aspects of the economy. In the process, new economic institutions developed and the entire way of life was altered. In this transformation, the State played a prominent part. Behind what we call the Industrial Revolution, there was not merely a new technique, but also a new spirit, a spirit of innovation, adventure and experiment. A number of factors, political and social, conditioned the manner in which and the tempo with which the transformation took place in different countries, but in essence, the motive force behind it was the same — a desire to go forward, to raise the standard of life so as to turn the economic struggle from one for bare existence into one for a competence and a surplus.

The peculiar circumstances under which industrialism was introduced into this country generated, on the other hand, a spirit of defeatism, and despair among the people. They could not comprehend these "miracles" of science. While the railway and the telegraph brought them face to face with world forces, their technique, outlook and mode of life remained generally unaffected. The old balance between agriculture and industry was destroyed; the villager found his subsidiary industries decaying; there appeared nothing in their place he could take up, no alternative avenues for employment. The result was more and more ruralisation, more and more dependence on agriculture, more and more pressure on the soil. A few cities and towns grew richer, but the rural areas generally sank into greater poverty, from which there seemed to be no escape.

Indian economists, following in the footsteps of Gokhale and Ranade, were not slow to recognise this peculiar character of the economic transition in India. They noted the peculiar difficulties of the Indian problem and tried to point out the absurdity of following in India a policy which may be good enough or just fashionable for England. The policy of the Government of India has been on the whole but little affected by the criticisms or suggestions of our economists. Even the suggestions and recommendations of their own Committees and Commissions have not been fully implemented. The various Famine Commissions of the third quarter of the last century pointed out the seriousness of the agrarian problem, but until about the end of the last war,

It is not the object of these preliminary remarks to point out what can be done and must be done here and now, but merely indicate the gravity and urgency of visualising our rural problem as a whole and to make out a *prima facie* case for an active State policy in this regard. There is no better agency for the necessary comprehensive planning than the State, and this, under our conditions, means ultimately the Government of India, for this is truly a matter which concerns the "peace, safety and tranquillity" of the country.

We would also emphasize in this connection that a proper policy on the part of the State must include in it as a basic plank the question of land reform. Unless the system of land tenures and land holdings with the attendant evils of absentee landlordism, sub-infeudation and tenancies, feudal levies and exactions and sub-division and fragmentation of holdings is altered, it is not possible to increase the productivity of the land. Several European countries were faced with similar problems during the nineteenth century, and they tried to reform their land systems by suitable legislative and other measures, thus making famines to a large extent a thing of the past. Most of these countries have favoured the system of peasant proprietorship and have sought to rehabilitate the peasant so as to make him more efficient, more contented and more enlightened. The land systems in India have had a long evolution; there are diversities and complexities as between the different parts of the country. The methods of reform will have to take all these into account. But there can hardly be any doubt that so long as the ownership, distribution and utilisation of land are not so planned as to make for economical cultivation, other reforms can hardly help the agriculturist except perhaps in a small way.

For voicing the grievances of our industrialists and businessmen there are Chambers of Commerce and Industry, Millowners' Associations and the like, which make suitable representations to Government from time to time and manage to get a hearing. Our rural masses are truly dumb. Their sufferings may be a fruitful source of sporadic agrarian riots or smouldering discontent, but there is no definite organisation of peasants themselves to mobilise knowledge, create and educate public opinion and lay

down policies in the interest of an ordered growth and reconstruction. A rural reform programme must therefore include the promotion of peasants' organisations and the training of leaders from among the villagers.

A word now about the object of this study which is the first publication under the auspices of this Society. The object of this study is to review the Indian Rural Problem in its general aspects, so as to enable us to visualise it as a whole and to sketch out the general lines of the policy which the State must follow. If it is true to say "Industrialise or Perish," it is equally important also to remember that we have to modernise, rehabilitate, revitalise and rebuild our rural economy in harmony with the needs of the economy as a whole.

Indian public opinion now thinks in terms of a country-wide all-embracing planning, but we have not attempted to offer in this book anything like a definite Plan for Agricultural Development. That task requires the co-operation of experts from different fields, and one cannot think of a plan for Agriculture apart from a plan for Industries, Communications, Housing, Electrical and Engineering Development, Education, Social Services, etc. In any case, we hope, we have made in the course of this study a number of suggestions which will be useful to any representative and authoritative body which takes up the task of formulating a proper plan. We should only add here that perhaps the most essential part of any plan is the personnel. However sound a plan may be on paper, it cannot reach fulfilment unless its operation is in charge of the right kind of personnel. For this reason, we have laid ample stress on administrative reform and on the need for revitalising village life through appropriate agencies and institutions. This work can begin and ought to begin right now. "Full-dress" planning may have to wait till we have a national Government at the Centre but there are many problems in respect of which it is possible for, nay incumbent on, the present Government of India to take the initiative. Some of the Provincial Governments have already started building up Post-war Reconstruction Funds, and if the Government of India help them with suitable grants-in-aid and technical advice, beginnings in the right direction can be made at an early date.

This volume is divided into three parts. Part I states concisely the facts of the situation. In this part comment is eschewed or reduced to the minimum. Part II reviews the activities of the various Government Departments and public and semi-public bodies, and attempts to assess the adequacy or otherwise of the work so far done. In Part III are set out the essentials of a proper policy, embracing not merely economic but, of necessity, the broader sociological aspects of the rural problem. The approach adopted here is more practical than academic, and the suggestions made are born of the varied personal experience of one of us. There are possibly some important topics which we have left out, but that perhaps is inevitable when we are dealing with a problem so vast and intricate. To be able to do justice to many of these problems, a much more intensive study is necessary than we have undertaken here. The present volume is thus a sort of general introduction to the other more specialised studies planned to be undertaken in course of time by this Society.

Our thanks are due to Professor C. N. Vakil, Director of the University School of Economics and Sociology, University of Bombay for placing at our disposal all the facilities for research available in the institution and for also having lent us, when necessary, the assistance of his research staff. We are also grateful to the Reserve Bank of India for similar help. They have given us ready access to the books and other material available with them. The office staff of this Society has, of course, borne their share of the burden of collecting the necessary data and preparing notes on the various topics dealt with in this volume. They have also done the arduous work of going through the proofs. Mr. B. S. Mavinkurve, who has been with us from the time this work was commenced, has rendered valuable assistance at all stages, and Mr. S. Thotapalli has also not spared himself, though he joined us later, and had other work to attend to. To both these men our cordial thanks are due.

Bombay, M. B. N.
April, 1944. J. J. A.

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CHAPTER I

ENVIRONMENT AND AGRICULTURAL RESOURCES

The Indian sub-continent is well marked off from the rest of Asia by mountains and the sea, which give the country an unmistakable geographical unity. Bounded by the Himalayas in the north, the country stretches southwards and at the Tropic of Cancer tapers off into the Indian ocean between the Bay of Bengal on the east and the Arabian Sea on the west. Lying entirely in the northern hemisphere, the mainland extends between latitudes 8° 4′ 28″ and 37° 17′ 53″ north and longitudes 68° 7′ 33″ and 97° 24′ 47″ east, measures about 2,000 miles from north to south and about 1,850 miles from east to west and covers an area of 12,61,411 sq. miles. Measured by the extent of its territory, India is the seventh largest country in the world. It has a land frontier 9,425 miles long and a coast line of 3,535 miles.

The Himalayas generally form India's northern boundary beyond which lies China. The Kingdom of Nepal, and Sikkim and Bhutan States bordering India on the north and north-east, cover a portion of the Himalayan region. A series of mountain ranges in the east separate India from Burma. In the east lies East Pakistan surrounded by the States of West Bengal and Assam and the Union Territory of Tripura. In the north-west, West Pakistan and Afghanistan border on India. In the south, the Gulf of Mannar and the Palk Strait separate India from Ceylon. The Andaman and Nicobar Islands in the Bay of Bengal and the Laccadive, Minicoy and Amindivi Islands in the Arabian Sea are parts of the territory of India.

PHYSICAL FEATURES

The mainland comprises three well defined regions : (i) the great mountain zone of the Himalayas, (ii) the Indo-Gangetic Plain and (iii) the Southern Peninsula.

The Himalayas comprise three almost parallel ranges interspersed with large plateaus and valleys some of which, like the Kashmir and Kulu valleys, are fertile, extensive and of great scenic beauty. Some of the highest peaks in the world are to be found in these ranges. The mountain wall extends over a distance of about 1,500 miles with a varying depth of 150 to 200 miles. In the east, between India and Burma and India and Pakistan, the hill ranges are much lower. The Himalayan ranges exercise a dominating influence both on weather and vegetation of the country.

The Indo-Gangetic plain, 1,500 miles long and 150 to 200 miles broad is formed by the basin of three distinct river systems, the Indus, the Ganga and the Brahmaputra. It is one of the world's greatest stretches of flat alluvium and also one of the most densely populated areas on the earth. The Peninsular plateau is marked off from the Indo-Gangetic plain by a mass of mountain and hill ranges, varying from 1,500 to 4,000 ft. in height. The more prominent among these are the Aravalli, Vindhya, Satpura, Maikal and Ajanta. The Peninsula is flanked on one side by the Eastern Ghats, and on the other by the Western Ghats. Between the Western Ghats and the Arabian Sea lies a narrow coastal strip, while between the Eastern Ghats and the Bay of Bengal there is a broader coastal area. The southern point of the plateau is formed by the Nilgiri Hills where the Eastern and the Western Ghats meet. Even these main regions contain a multitude of distinctive divisions within themselves determined by the factors of climate, soil and hydrology. Underlying the physiography of India is one great common factor, namely, the rhythm of the monsoonal year.

RIVERS

The Indo-Gangetic Plain is traversed by two great river systems, one comprising the five Western rivers which gave the Punjab (of the undivided India) its name and the other of seven Eastern rivers including the Ganges and the Jamna. The Peninsula in the south is drained by seven main rivers including the Godavari, the Krishna and the Mahanadi. There is a strong contrast between the rivers of the Himalayas and those of the

Peninsula. Erosion is extremely active in respect of the Himalayan rivers. They also bring down vast quantities of silt. Most important of all, the rivers in the north flowing down from the Himalayas are not dependent on the monsoon rainfall alone for their water supply. The melting of the snows makes the rivers perennial. This is all the more valuable as it comes at the height of the hot weather—April-May—when the Peninsular rivers are at the lowest. By contrast, the Peninsular rivers depend for their water supply entirely on rainfall which is concentrated in 5 or 6 months of the year. They flow in torrents during the monsoon causing frequent floods but shrivel up in the hot weather and are almost dry. Hence they are less useful for irrigation than the rivers of the North. Where irrigation is possible they need a proportionately much greater capital expenditure for the construction of barrages and reservoirs. Thus, large scale river irrigation was almost confined to the deltas of the East Coast. Hydro-electric locations were also rarer in the Peninsula.

CLIMATE

India is pre-eminently a land of tropical monsoon climates.[1] Though the continental climatic variations affect the upper air, the land is sufficiently massive to develop its own individual system of monsoons. The Indian Meteorological Department recognises four distinct seasons: (i) the cold weather season (December-March); (ii) the hot weather season (April-May); (iii) the rainy season (June-September); and (iv) the season of the retreating south-west monsoon (October-November). From June to September, the flow of winds is generally from the sea to the land and the season is one of high humidity, clouds and rain. Based on these climatic variations, there are two main agricultural sowing seasons: namely, June-July and October-November.

"In all that depends upon climate the different parts of India exhibit very great diversity . . . the term *Indian climate* means

1 In meteorological literature the word 'monsoon' refers to the great air currents of winter and summer, the north-east and south-west monsoons respectively. The use of these directional terms is however not appropriate to the winds over India. Possibly the usage is a hang-over from the old sailing-ship days. *Cf.* O. H. K. Spate: India and Pakistan—A General and Regional Geography (1954), p. 41.

little more than that, on a general average of the year, the sun is higher in the heavens and the temperature some degrees greater, than in Europe."[2] In the northern region, Assam in the East and Rajasthan in the West present a contrast of dampness and dryness greater than that shown by the British Islands and Egypt. Again in the Punjab, the continental climate has a pronounced influence with extremes of heat and almost freezing winter cold, while in Kerala in the South an almost unvarying heat with great humidity prevails throughout the year. Over most of India, the cold weather is almost rainless, except for occasional late monsoon storms. Except in the North-West, where June is the hottest month and July only 2-4°F lower, mean temperatures in the rains are nearly everywhere distinctly lower than in May. Even where there is little rain, there is generally a good deal of cloud and the lower temperatures are offset by higher humidities.

When the climate of India is described often as sensible, the reference is to weather rather than to climate. The regularity of the occurrence of these weather conditions makes for an easier adjustment of physiological and social factors in India. On the whole, for most people, "it isn't the heat, it is the humidity that counts."

RAINFALL

By far the greater portion of rainfall in India is under monsoonal dominance. The south-west monsoon from June to October accounts for nearly 75 per cent of the country's total annual rainfall and is the chief source of water supply for most of the Peninsular areas and over almost the whole of North India. The retreating monsoon brings heavy rainfall to the south eastern portion of the Peninsula between October and December. The areas in Madhya Pradesh and Andhra Pradesh also receive during this season a few showers which are of great value to the wheat growing districts in these regions. Though winter is usually without rain over most of India, some parts of the extreme north-western districts receive some rains during this season. The cold weather rain, though not heavy, is important

2 *Vide* H. F. Blandford: The Climates and Weather of India, Ceylon and Burma (1889), pp. 96-97.

as the winter crops, especially wheat and barley, depend largely upon it.

The monsoon rainfall varies as between the different parts of the country. The normal annual rainfall is 106.6 centimeters (42 inches) but regional contrasts in precipitation are most striking. Cherrapunji in Assam receives an annual average of 1,087 centimeters (428 inches) while parts of Rajasthan get less than 18 centimeters (7 inches). The amount of rainfall is below 50 centimeters (20 inches) over a large part of Central India and East of the Peninsula. The pattern of distribution varies considerably even over short distances in accordance with local topography and the location of the place vis-a-vis the two great branches of the monsoon.

Broadly speaking, India has a cycle of 5 years in which one year is good, one bad and three are indifferent. A recent study after investigating the movement of the agricultural income series for India (1900-1950) came to the conclusion that "there is some evidence of a regular six-year cycle."[3] The variability of rainfall largely determines the productive efficiency in agriculture. It is obvious that the usefulness of the rainfall in India for agriculture and for hydro-electric development is limited by its concentration over 5 months. Taken as a whole, agriculture in areas with under 38 to 50 centimeters (15 to 20 inches) rainfall is practically entirely dependent on irrigation. Intensive cultivation in these areas demands very expensive major irrigation works. Only areas which have over 115 to 127 centimeters (45 to 50 inches) of rain are normally free from drought. The timing and the intensity of the early rains have also a determining influence on harvest. Even if the total rainfall received in a given year is satisfactory, if the periodical distribution is not even, especially when the rains are late, the harvest may be poor. Gujarat, the eastern U.P. and parts of Bihar are particularly liable to such risks.

An analysis of the distribution of rainfall in India made for the period between 1900 and 1950 brings out clearly that the

3 Vatsala Mukerji, "Some Regression Models Fitted to the Agricultural Income Series for India," *Artha Vijnana*, Vol. 3, No. 1, March, 1961, p. 66.

monsoon rainfall was more frequently below normal in regions of low rainfall like the western Rajasthan, the eastern U.P. and the southern Madras and above normal in regions which receive the average rainfall between 63 and 76 centimeters (25 and 30 inches) like the eastern Rajasthan, the western Madhya Pradesh and parts of Gujarat. It is on account of this aspect of seasonality that Indian agriculture has been described as "a gamble in rain." In consequence of this character of rains in India, in common with tropical regions generally, rainfall is less penetrating in proportion to its quantity than in countries where much of it falls gently and spreads more evenly allowing time for its absorption by the ground.

Rainfall and Agricultural Success

The data on rainfall do not provide a dependable indication of the success or failure of the agricultural season. A study on the subject for the Deccan region for the years 1865-1938 leaves unanswered the question: "How far is the actual amount of effective rain reflected in the success of the agricultural season in the areas under study?"[4] It is difficult to determine the success of a season by reference to the total effective rainfall or the rainfall in any part of the season. From the case study of Deccan, it appears that in all cases. beyond effective rainfall of 71 centimeters (28 inches) per annum, a further increase does not automatically increase the agricultural success of the season. The early rains have some importance only to *kharif* crops. The rains in July provide little or no guide to crop prospects. There is evidence that abnormal rains in July may also be injurious to crop cultivation. It is on the basis of rainfall after the end of August that the closest relationship between rainfall and agricultural success can be established. On the whole, however, it will be hazardous to correlate the success of an agricultural season with the total effective rain in any particular part of the year. The inference is that instead of taking the rainfall itself as the means of judging the effect of rainfall on agriculture, if the period of the wetness of the soil above certain standards is taken as the basis, a closer correlation is possible.[5]

4 Harold H. Mann: Rainfall and Famine — A Study of Rainfall in the Bombay-Deccan, 1865-1938 (1955).
5 *ibid.*, pp. 33-39.

Rainfall and Famine

In India, failure of rainfall has been associated with famine conditions. Till the first decade of this century, the failure of agriculture resulted in a heavy toll of human lives.[6] Table I gives the incidence of famines.

TABLE I

FAMINE AND MORTALITY IN INDIA: 1800-1950

Period	Number of famines	Estimated mortality (in million)
1800-1825	5	1
1825-1850	2	0.4
1850-1875	6	5
1875-1900	18	26
1900-1925	17	4.08*
1925-1950	13	1.5†
	61	38.7

* Data do not include the high mortality rates reported in 1901 Census Report for the Central India States of Malwa Agency, Bhopal, Indore Agency, Bhopawar and Indore Residency.

† Relates to Bengal Famine of 1943.

As a result of the development of transport facilities and the more effective organisation of relief measures during periods of famine, the loss of human lives has been greatly reduced. A famine is now characterised more by a scarcity situation which implies shortage of purchasing power among the population than scarcity of food-stuffs available. However, even now such scarcity conditions create intense suffering in the affected areas owing to the low sustaining power of the bulk of cultivators and parti-

6 For a connected account of famines and scarcities that occurred in India between the period 1860 to 1945, refer B. M. Bhatia: Famines in India, 1860-1945 (1963).

cularly of agricultural labourers. There are still areas of chronic scarcity conditions in Gujarat, Maharashtra, Rajasthan, Andhra and the East Punjab, extending over 30 million acres.[7]

SOILS

The four main types of soil found extensively over India are (1) the alluvial soil, (2) the black soil; (3) the red soil, including red loams and yellow earths, and (4) laterite and lateritic soils. Besides, there are mountain and hill soils, desert soils, saline and alkaline soils, peaty and other organic soils.

The alluvial soil is formed of a fine sediment carried down from the mountains by rivers and is very fertile (except for the deficiency of nitrates) as well as light and easily worked. These are the most important agriculturally and they cover an extensive tract. In the Indo-Gangetic Plains alone (the whole of which is comprised in this area), they cover at least 300,000 sq. miles, *i.e.*, little less than 19 per cent of the country's area where some 42 per cent of the population live. If we add to this, the alluvial soil area in Madras, Gujarat and Kerala, half or more of the total population lives on alluvial soil. With such a long spread and varied sources of formation, the qualities of the soil are far from uniform. The variations in fertility are due mainly to factors of water-table, and the presence or absence of calcareous concretions in the sub-soil.[8] In general these soils are adequate in lime but the nitrogenous and organic contents are low.[9] "Potash is adequate and phosphoric acid, though not plentiful, is generally less deficient than in other soils." On the whole, they contain all the ingredients of fertility, are not too dense in consistency, are naturally drained and lend themselves on this score to extensive irrigation schemes. It is, therefore, difficult to attribute any special regional crop distribution directly to alluvial soils. They provide

7 Refer Report of the Fact-Finding Committee for Survey of Scarcity Areas in Bombay State, 1960, Vol. I (General Report), Government of Maharashtra (1960).

8 *Vide* O. H. K. Spate: India and Pakistan, *op. cit.*, p. 82.

9 It may be said of Indian soils in general that humus (organic matter) and nitrogen tend to be deficient, but that lime, potash and phosphoric acid are usually present in suitable quantities. *Vide* J. A. Voelcker: Improvement of Indian Agriculture (1893), Chapter V.

an excellent media on which crops suited to the climate and aided by irrigation, whether by wells or canals, can grow effectively. Sugarcane and rice are the main crops of these tracts.

The black soil is most typically developed in the Deccan but is not entirely confined to this area. The soils are of varying quality and are found especially in the South and the South-east Madras and in extreme south-east (Tirunelveli). The alluvial belt of Gujarat and parts of the Coromandel coast include considerable areas of similar soils. In the Deccan, the soil is very deep but, on higher ground, it is thinner and grades into reddish brown or red. Over most of this area, cotton and *jowar* are the main crops. The black cotton soil is especially suited to the growth of the long-rooted, indigenous cotton plant, though it does not suit the shallow-rooted American cotton.

The red soils comprise various categories some of which are brown-grey or black. There are areas with good loams which respond well to irrigation. The mineral deficiencies are the same as for the black soil. The whole of Madras, Mysore, south-east Maharashtra and a tract running along the eastern part of Madhya Pradesh, Chhota Nagpur and Orissa contain mostly varieties of red soil. The crops that are most suitable for this type of soil are groundnut (the later maturing and bolder seed types) and minor millets, the predominant one being *Ragi (Eleusine Corana)*, a millet confined almost entirely to the south of the country.

The laterite soil which is found in Madhya Pradesh, Assam and along the Western and Eastern Ghats is formed by the decomposition of the 'laterite' rocks due to heavy tropical rainfall. From an agricultural point of view, the prevailing characteristics of laterite are extreme acidity with an almost complete lack of lime and organic material. Where the soil consists of heavy loams and clays and can easily retain moisture, rice can be grown. Generally, tea thrives best in these tracts. The plantation districts of South India, Bengal and Assam are therefore to be found in this region.

Soil and land utilisation survey is most essential not only for improving the efficiency in land use but for increasing crop

yields. The major handicap in determining a scientific pattern of land utilisation in India is the lack of such a survey. At present the information on the various types of soil is being collected by different organisations such as the irrigation departments of various States, by agricultural experiment stations, universities and other institutions. These employ different techniques of classification and survey. Further, such data are available for limited areas only in different parts of the country. Consequently, there is no comparability between the data available. The Irrigation Commission of 1901, the Royal Commission on Agriculture, 1928, the Russel Report, 1936, the Report of the Planning Commission, 1952, and the recent report of the Sub-Committee of the Planning Commission on Natural Resources, have all successively emphasized the necessity for a systematic soil survey of India as an essential preliminary to the development of irrigation and improvement of agriculture.

Until recently knowledge of soils in different parts of the country was inadequate and the necessary organisation for soil surveys had not been established. Appraisal of soil resources involving survey and classification of soils provides the basis for assessing their potentialities as well as their limitations for effective exploitation and rational land use. The main object of soil surveys is to classify and map out the various sorts of soils, to know soil differences and to co-ordinate knowledge of soils with a view to laying down standards of nomenclature, etc. With the aid of these surveys it becomes possible to prepare schemes for the better use of land and to plan for soil conservation and irrigation and drainage works. In 1955, an all-India soil survey scheme was initiated at the Indian Agricultural Research Institute with a view to carrying out reconnaissance soil surveys leading to correlation of soils of different regions. Soil correlation work involves classification and laying down of nomenclature of soils on uniform basis and also the preparation of soil survey reports and soil maps. In the field of soil surveys, State Governments are specially concerned with aspects relating to agriculture, forestry, irrigation, drainage, soil conservation, etc. Since there are common soil problems covering more than one State and since all States do not have their own soil survey organisation, it was felt that with a view to co-ordinating work of soils, the best

course would be to set up laboratories on regional basis for the major soil groups occurring in India, namely, (1) at Delhi for the Alluvial Soil Regions, (2) at Poona (now at Nagpur) for the Black Soil Region, (3) at Kharagpur (now at Calcutta) for the Red and Laterite Soil Region I, and (4) at Bangalore for the Red and Laterite Soil Region II. Three years after its inception the scheme was integrated with the scheme for soil and land use planning drawn up by the Central Soil Conservation Board for the purpose of soil and land use survey in the catchment areas. The programme was being executed in 13 river valley catchments in the Third Plan. By the end of the Third Plan, the area covered by the programme was 8.5 lakh acres. It is proposed to extend the programme to cover an area of 25 lakh acres in the Fourth Plan. Surveys in catchment areas aim at classifying lands into capability classes, essentially from the point of view of adopting soil conservation measures with a view to minimizing soil erosion, preserving the top soil for cultivation and preventing sediment flowing into storage reservoirs and thus increasing their life. Soil conservation work in catchment areas involved detailed surveys of agricultural lands and reconnaissance surveys in other areas.

India needs a comprehensive land utilisation survey which would take into consideration the problems of soils and reclamation, development of irrigation and water supply both for crops and men. On the basis of such a survey it would be possible to adopt crop planning with reference to the potentialities of each region and also to undertake, as conditions permit, engineering projects which would supply the varied needs of agriculture and rural life. It would not, indeed, be possible to adopt any such major plans for areas already intensively used; there would be a number of difficulties in the way especially because of the small size of holdings and the density of the rural population. But with reference to undeveloped regions, the scope for reconstruction work on the land utilisation survey would be immense.

FOREST RESOURCES

The total area under forest is estimated in 1964-65 at 61.17 million hectares[10] or about 20 per cent of the total geographical

10 1 hectare = 2.47109 acres; and 1 acre = 0.40468 hectare.

area of the country.[11] Forests are unevenly distributed, the proportion of forest land varying from about 11 per cent in the north-west to about 44 per cent in the Central region. Most of the forest areas are situated in hilly and mountainous areas, the Himalayas and their foot hills and the hilly ranges of Peninsular India (the Western and Eastern Ghats, the Vindhyas, Satpuras and associated ranges). The areas under forests in the Peninsular hills and plateau regions extends over 55.7 million acres, or nearly 31 per cent of the total forest area of the country. The high hills are covered with pine, fir and bamboo forests while on lower ground grow trees like teak, sal and babul. The major forest products are timber, firewood, round wood, pulp wood, charcoal wood, etc., while the minor products comprise bamboos and canes, drugs, spices, fodder and grazing, gums, resins, lac, rubber and latex, incense and perfumes, fruits, animal products and other miscellaneous materials. Table II gives the data on production and foreign trade of the major and minor forest products.

TABLE II

QUANTITY AND VALUE OF FOREST RESOURCES

	Unit	1949-50	1958-59	1962-63
Production				
Major Forest Produce	in '000 cubic ft.	534,528	588,464	657,533
	value in '000 Rs.	171,648	412,136	504,301
Minor Forest Produce	value in '000 Rs.	56,791	84,048	134,358
Exports				
Major Forest Produce	value in '000 Rs.	14,615	32,200	35,338
Minor Forest Produce	value in '000 Rs.	45,096	69,800	119,217
Total	value in '000 Rs.	59,711	102,000	154,555
Imports				
Major Forest Produce	value in '000 Rs.	141,424	214,400	217,212
Minor Forest Produce	value in '000 Rs.	27,898	32,800	19,974
Total	value in '000 Rs.	169,322	247,200	237,186

Sources: 100 Years of Indian Forestry 1861-1961, Forest Research Institute (1961).
Times of India Directory, 1967.
Indian Agriculture in Brief, Eighth Edition, *op. cit.*, pp. 140-41.

11 Indian Agriculture in Brief, Eighth Edition, Directorate of Economics and Statistics, Ministry of Food, Agriculture, Community Development and Co-operation, Government of India (1967), pp. 36-37.

The most advanced countries in the world have very high per capita consumption of wood. India's per capita consumption of round wood is 1.4 c.ft. as compared with 58 c.ft. in the U.S.A. The consumption of pulp products is 1.6 lb. as against 78 lbs. in the U.K. The area under forests is less relatively to the consumer requirements of the villages and those of industry and trade. Per capita forest area is 1.8 and 3.5 hectares in the U.S.A. and U.S.S.R. respectively, while in India the figure is 0.2 hectare.[12] The National Forest Policy Resolution of 1952 proposed that the area under forests should be raised steadily to 33 per cent of the total area, the proportion to be aimed at being 60 per cent in hilly regions and 20 per cent in the plains. The scarcity of forest produce and their gradual inaccessibility to the rural population have been the cause of the widespread habit of using cow-dung as fuel.

Forests are an important source of revenue to the Government. They render the climate more equable, absorb excess water during heavy rains and thus lessen the severity, both of drought and flood. This emphasizes the importance of preserving an adequate proportion of the land area under forests in the interests of agricultural development. It is generally agreed that there has been a reckless destruction of forests in India in the past, over many parts of the country. The depletion of forest resources has deprived the peasantry of the much needed wood for fuel and for building purposes and exposed agriculture to greater risks of drought, flood and soil erosion. It may have also been a factor in the sterilization of the soil which has been reported of late. The scope for extending the forest area under the present pressure of population on cultivated area appears to be limited. There is, therefore, need in every State for a well-managed forest conservation and afforestation policy and for the creation of village woodlands and pasture, under a co-ordinated Central Forest Policy.

Forest resources appear to have been hitherto utilised as a source of revenue. Forests have an important ameliorating influence on climatic conditions. They have been classified by

12 Second Five-Year Plan, Planning Commission, Government of India (1956), p. 299.

Government as either reserved or protected forests. The more urgent problems of providing cheap fuel to the rural population and grazing facilities to their cattle as also the necessity of providing raw materials for various industries have not received sufficient consideration in official planning. The tropical and semi-tropical forests of India hold out great possibilities for starting subsidiary industries such as manufacture of charcoal, extraction of turpentine, lac culture, preparation of dyeing and tanning materials, baskets, rope and mat making and such other occupations which, if well-organised, would confer material benefits on the rural population.

WATER POWER RESOURCES

In water power resources India holds the third place, next only to Canada and the United States of America. The total annual flow in the rivers is estimated to be equivalent to 1,356 million acre-feet for the Indian Union. Of this, only 76 million acre-feet, *i.e.*, only 17 per cent of the usable flow or 5.6 per cent of the total annual flow had been utilised for purposes of irrigation in 1951. Though there is some improvement in recent years,[13] the sizable portion of the flow still runs as waste into the sea. In 1921 a minimum continuous water power potential of 3.5 million kW. was indicated by a Committee which investigated the position. This is considered as an under-estimate and the total hydro-power potential is placed now between 30 and 40 million kW.[14] of which 4.20 million kilowatts had been developed by 1965-66. The country is thus utilising only about 11 per cent of the total power potential, whereas Germany (East and West) has developed over 50 per cent, Switzerland 38 per cent, France 27

13 By the end of the Third Five-Year Plan, it is estimated that about 150 million acre-feet representing about 33 per cent of the usable flow or 10.9 per cent of the total annual flow would be utilised. An additional 50 million acre-feet are likely to be used by 1970-71, bringing the proportion to about 45 per cent of the usable flow. Fourth Five-Year Plan — A Draft Outline, Planning Commission, Government of India (1966), p. 215.

14 The total power potential includes about 4 million kW. from the west flowing rivers, about 7 million kW. from the east flowing rivers of the southern region, about 4 million kW. from the rivers of the central region and about 20 million kW. from the Himalayan rivers. Second Five-Year Plan, *op cit.*, p. 331.

per cent, the United States 22 per cent, and the United Kingdom 20 per cent of the national water power resources. In the last 27 years since 1939, the total electricity generating capacity in India has increased from about one million kW. in 1939 to 10.35 million kW. in 1965-66. About 40 per cent of this capacity is in hydro-electric stations. Progress has also been made in setting up a number of nuclear power stations for generating substantial electrical energy.

Rural electrification continues to make steady progress. Before the commencement of the First Plan the number of towns and villages electrified was 3,687. This rose to 7,400 by the end of the First Plan, and to 24,209 by the end of the Second Plan. In the Third Plan, the target of 43,000 towns and villages was exceeded, the actual achievement being 52,300. The number of irrigation pumping sets electrified during the Third Plan increased from 1.6 lakhs to 4.8 lakhs. However, the development is not evenly spread but confined mainly to the States of Mysore, Madras and Uttar Pradesh and is associated with the development of hydro-electric power. The average per capita consumption in India was only 58.50 kilowatt hours per year in 1964-65 as compared to over 1,100 kWh. in the U.K., 2,207 kWh. in the U.S.A. and 3,905 kWh. in Canada. Only five States, Punjab, Maharashtra, West Bengal, Madras and Gujarat have a per capita consumption above the average. Besides, the distribution of power is also unbalanced as between urban and rural areas. Thus, India promises to be one of the leading countries of the world in the development of hydro-electric power on account of her untapped resources and potential demand. The Energy Survey Committee set up by the Government in 1963 has made a comprehensive study of the country's resources and requirements.

LIVESTOCK RESOURCES

India has the largest cattle population of any country in the world. The total world cattle population in 1960-61 was 932 million.[15] In 1961, the total cattle population in India was 176 million. There were 51 million buffaloes in the same year. The

15 Production Yearbook 1962, Vol. 16, Food and Agriculture Organization of the United Nations (1963), p. 149.

country possesses more than a fifth of the world's cattle. The U.S.S.R. had a total cattle population of 76 million in 1960-61 (nearly just a little over a third of India's total). The U.S.A. had a total population of 97 million which was more than half of India's total. The United Kingdom had only 11.9 million animals (one-fifteenth of the Indian cattle population). Denmark had 3.6 million cattle population.[16] While thus India holds a leading position in her cattle resources quantitatively, more than half of this cattle wealth is lost to the country owing to the inferior quality of the animals.[17] Inadequacy of grazing facilities, the prevailing religious sentiment against the slaughter of decrepit cattle and the absence of selective breeding on a wide scale have been perpetuating the poor species and rendering an increased number of them uneconomic aids to agricultural production.[18] The data from quinquennial censuses from 1920 roughly indicate that there has been only a slight variation in the growth, the maximum being 6 per cent. The density of cattle per 100 acres of sown area is as high as 68 in India, as against 25 in Egypt, 15 in China and 21 in Japan.

The number of cows was estimated at 54.3 million in 1961. The proportion of cows which yield no milk or are not milked at all is on a conservative basis estimated at 55 per cent. The ratio of dry and other cows which are not in milk to those in milk varies considerably between the different States. According to the 1961 Census, while in Orissa, West Bengal, Madras, Andhra Pradesh, Mysore and Kerala, there are about two hundred dry cows for every hundred milch cows over 3 years of age, in Bihar and Madhya Pradesh, the ratio is about equal and it is as low as 62 in Assam and 67 in the Punjab. This generally indicates

16 *ibid.*, pp. 159-160.

17 The National Income Committee, in their final report (1954), have assumed 55.4 per cent of the cattle population as non-service animals for calculating the income from animal husbandry. Final Report of the National Income Committee, p. 51. The Cattle Utilisation Committee calculated on an overall estimate that about 11.5 million adult cattle (or 10 per cent of the cattle population) are unserviceable or unproductive.

18 Approximately 750 farm-bred bulls of known pedigree are distributed annually by the Governments in different States for developing draft as well as milch cows. The existing number of approved bulls meets less than 0.5 per cent of the total requirements of the country. *Vide* First Five-Year Plan (1953), pp. 274-275.

that in the rice belt area and in the South, a comparatively large number of unproductive cows are maintained. The normal ratio of dry animals to those in milk should be 1:1. The high proportion in the above regions only imposes a great strain on the country's fodder resources.

Regarding the consumption requirements of milk, the average per capita consumption of milk and milk products is 5.5 ounces per day against the standard of 10 ounces per day recommended by nutrition experts. However, the consumption of milk and milk products varies considerably in different parts of the country. It is as high as 16.89 ounces in the Punjab and 15.72 ounces in Rajasthan while in Orissa it is as low as 2.64 ounces. Except the States of the Punjab and Rajasthan all the major States are deficient in milk consumption measured by the standard nutrition requirements. Cows provide a little less than half and buffaloes a little more than half the total supply of milk. The Report on the Marketing of Milk in the Indian Union (1950) gives an average daily production of milk per village at only 2.5 maunds. The effective demand for milk and milk products is found in urban markets only, even though 95 per cent of the milch cattle are in the rural areas where 82 per cent of the population resides. Nearly 30 to 40 per cent of the urban milk supply is obtained from villages situated within a radius of 30 miles of the urban areas. As milk is an important item of the vegetarian diet and as a large part of the population is vegetarian, the gap between production and requirements indicates the need for improving the quality of the milch cattle and increasing their production capacity. It is estimated that with the present strength of milch cattle, milk production can be increased by 75 per cent; 30 per cent by better breeding, 15 per cent by better feeding, 15 per cent by better management and 15 per cent by disease control.

The efficiency of the cattle as draught animals for cultivation and draft purposes is also unsatisfactory. The average area now cultivated by a pair of bullocks is 10.2 acres. With better breeding, feeding and other methods of improvement, the potential number of acres that can be cultivated is 17.28 acres. It is estimated that the maximum that can be achieved and may be taken

as the standard is 20 acres.[19] This would mean an increase of 60 per cent in work capacity. On the basis of the calculations made by Burns, it is estimated that in the Uttar Pradesh and Bihar there is a surplus of about 4 million bullocks. This does not imply that there is surplus bullock power in each and every State in India.

The adverse climatic and economic conditions possibly explain the low productive capacity of the cattle in India which is not commensurate with their numerical strength. In spite of this unsatisfactory position, the livestock products contribute a significant share to the total production capacity of India's agricultural economy. The potential value to the nation of developing the animal husbandry and the resulting contribution which it would make to the farmers' income is indicated by the scope for increasing productive capacity of cattle by the use of scientific methods made available by research in animal husbandry. The magnitude of the potentiality can be illustrated by the nature of some of the livestock products in demand. India is the largest exporter of hides and skins in the Commonwealth region, her products representing half of the total Commonwealth exports. India's annual export of this group of products was estimated at roughly Rs. 9.55 crores in 1965-66. It is significant to note that hides and skins represent only a minor by-product of the cattle industry; still the trade in the products has a great monetary value. Similarly, cattle labour is an important item in agricultural production. The farm management studies in different States have shown that between 8 and 42 per cent of the costs of cultivation is accounted by cattle labour. The total value of cattle labour alone is estimated at about Rs. 300-500 crores.[20] The manurial value of cattle dung is also an important factor in maintaining soil fertility at a high level. This has yet to be properly estimated.

19 Burns estimated that though the efficiency of the bullocks could be raised to the level of 30.72 acres per pair, it will not be possible, in practice, to utilise the whole of this efficiency as the bullocks will have necessarily to remain idle for a period. W. Burns: Technological Possibilities of Agricultural Development in India (1944), p. 110.

20 Reports on Studies in Economics of Farm Management in Different States, Directorate of Economics and Statistics, Ministry of Food and Agriculture, Government of India. *Vide* "Role of Cattle in India's Economy," S. C. Chaudhri and R. Giri, *Agricultural Situation in India*, Vol. XVIII, No. 9, December, 1963, p. 591.

The cattle population in India is excessive and it is among the least efficient in the world. Fewer but fitter animals would be the proper objective of policy. This objective will be reached only when we eliminate "scrub" cattle and raise the quality of the rest by selective breeding and keep them well fed through the provision of adequate grazing facilities.

OTHER LIVESTOCK

India has 40 million sheep or more than one-fourth of the sheep population of Australia (152 million) or more than one and one-fourth that of the U.S.A. (32.9 million) and slightly less than the total number in Argentina (49 million). Indian goats, about 61 million, constitute nearly one-fifth of the number of these animals in the world.[21] It is estimated that on an average, about 72 million pounds of wool are produced every year. Of this, about one-half is exported as carpet wool from India mainly to the U.K. and U.S.A. The value of export of wool and other animal hair was estimated at Rs. 7.46 crores in 1965-66. Rajasthan alone contributes nearly one-third to the total production of wool. The deficiency in wool production is indicated by the fact that about 15 to 17 million pounds of semi-processed wool are imported,[22] mainly from Tibet.

POULTRY

The number of poultry birds in the country has been estimated at 117 million (1961).[23] When compared to the numerical strength of poultry birds in different countries, it appears that India ranks very high among the poultry producing countries of the world. But in poultry farming the main factor for improvement is the application of research to increase the quality of the poultry population. The ordinary village hen is generally undersized and is estimated to lay about 50 under-sized eggs in a year as compared to 120 in Western countries.[24] By a process of

21 Production Yearbook 1962, F.A.O., *op. cit.*, pp. 169-174.

22 Third Five-Year Plan (1961), p. 350.

23 The Indian Council of Agricultural Research had estimated the number of fowls alone at 173 million in this country. Only the U.S.A. has a larger number of poultry than India.

24 Second Five-Year Plan, *op. cit.*, p. 289.

selective breeding, the Indian Veterinary Research Institute has produced a superior strain which would step up the yield by about hundred per cent.

FISHERIES

Fisheries in India constitute an important source of improving the quality of the diet of the Indian population. Even in the present under-developed state, they contribute nearly Rs. 124 crores (1965-66) to the national income.[25] The production of fish in 1960-61 was estimated at about 1.4 million metric tons out of which about 70 per cent are sea and estuarine fish and 30 per cent fresh water fish. In 1967, the production remained at the same level. The production rate is only about a quarter of the requirements. Madras, Kerala and West Bengal are the three States which account for the major part of the production. Though fish production has increased in recent years, on the whole there has been a progressive decline in the production of fresh water fish. However, the potentialities in fish production are great. The rivers of India and the tropical seas around are a valuable source for a variety of rich edible fish. The brackish water lakes and back-waters are also rich in fish. The brackish water area is computed at about 1.9 million acres and includes the Chilka Lake covering about 256,000 acres and yielding about 3,000 tons of fish annually. The seas abound in special species of mullet and pomfret, seer, hilsa, mackeral and whiting. While the inland waters breed varieties of fresh water fish of which the *rohu*, the *catla* and the *mrigal* are well-known. Even the creeks and hill streams contain fair supplies of fish such as mullet, perch and trout. Fish is the easiest and cheapest source of proteins and valuable mineral substances and hence the exploitation of fishery resources should materially raise the standard of the people's diet which, at present is highly deficient in necessary proteinous food-stuffs. While the potentialities of the development of fisheries in India are vast, a 50 per cent increase in fish production over a period of about 10 years is observed to be within the bounds of practical accomplishment.[26] The industry remains in

25 Estimates of National Product (Revised Series), 1960-61 to 1966-67, Central Statistical Organisation, Department of Statistics, Government of India (1967).

26 Second Five-Year Plan, *op. cit.*, p. 292.

the hands of an illiterate, poor and unorganised section of the people with little practical assistance from the State. The number of boats in operation is estimated at only about 73,400. Production per unit of effort is low because the small country craft cannot operate beyond a few miles from the shore and much time is wasted in going to and from the fishing grounds. "As in Japan it appears that the general conditions of the industry are such that initiative must necessarily be taken by Government in the uplift and education of the fishing community and the introduction and testing of raw and improved apparatus and methods."[27]

LAND UTILISATION

The official classification of land is made under 5 categories: (1) forests,[28] (2) areas not available for cultivation,[29] (3) other uncultivated lands excluding current fallows,[30] (4) current fallows[31]

27 Indian Year Book, 1942-43, p. 606.

28 The forests include all actually forested areas whether State-owned or private. If any portion of such land is used for agricultural purposes that portion is excluded from the forest area and included under the appropriate head of cultivated or uncultivated area.

29 This is sub-divided into two classes: (i) land put to non-agricultural uses, *i.e.*, all lands occupied by buildings, roads and railways or under water and (ii) barren and uncultivable lands, *i.e.*, mountains, deserts, etc., which cannot be brought under cultivation except at a high cost whether such land is in isolated blocks or even within cultivable holdings.

30 This is sub-divided into three classes: (i) permanent pastures and other grazing lands which include all grazing lands whether permanent pastures, medows or not, village common and grazing lands within forest area, (ii) miscellaneous tree crops and shrubs which are not included in the net area sown, as for example, land under casurina trees, thatching grasses, bamboo bushes and other fuel groves, (iii) cultivable wastes which include lands available for cultivation whether or not taken up for cultivation or abandoned after a few years for some reason; such lands may be either fallow or covered with shrubs and jungles and may be assessed or unassessed, lying in isolated blocks or within cultivated holdings. Land once cultivated but not cultivated for five years in succession is also included in this category.

31 This is sub-divided into two classes: (i) fallow lands other than current fallows which include all land taken up for cultivation but are temporarily out of cultivation for a period of not less than one year and not more than five years. The reasons for keeping them fallow may be either (a) poverty of cultivators, (b) inadequate water supply, (c) malarial climate, (d) silting of canals and rivers or (e) unremunerative nature of farming; (ii) current fallows which comprise cropped areas which are kept fallow in the current year.

(5) net area sown.[32] Table III indicates the distribution of land in India among the major uses according to the official classification.

TABLE III

CLASSIFICATION OF AREA IN INDIA

(in thousand hectares)

	1950-51	1964-65
1. Area under forest	40,482 (14.2)	61,170 (20.0)
2. Area not available for cultivation	47,517 (16.7)	50,172 (16.4)
(i) Land put to non-agricultural uses	9,358 (3.3)	15,141 (4.9)
(ii) Barren and un-culturable land	38,159 (13.4)	35,031 (11.5)
3. Other uncultivated land excluding fallow land	49.443 (17·4)	36,389 (11.9)
(i) Permanent pastures and other grazing land	6,675 (2·3)	14,809 (4.9)
(ii) Land under miscellaneous tree crops and groves not included in net area sown	19,828 (7.0)	4,218 (1·4)
(iii) Culturable waste	22,943 (8.1)	17.362 (5.6)
4. Fallow land	28,124 (9.9)	20,300 (6.6)
(i) Fallow land other than current fallows	17,445 (6.1)	9,168 (3.0)
(ii) Current fallows	10,679 (3.8)	11.132 (3·6)
5. Net area sown	118,746 (41.8)	137,916 (45·1)
6. Total reporting area†	284,315 (100·00)	305,947 (100.00)
7. Area for which no return exists	42,438 (13.0)	20,862 (6.8)
8. Total geographical area*	326,809	326,809

Note: Figures in brackets indicate percentage to reporting area.
† Due to change in coverage the figures are not comparable from year to year.
* According to Surveyor General of India from year to year.
One hectare = 2·47109 acres.
Source: Indian Agriculture in Brief, *op. cit.*, pp. 36-37.

32 The net areas sown consist of all lands sown with crops or orchards. *Vide* Indian Agricultural Statistics 1956-57, Vol. I (Summary Tables), Government of India (1960), p. 142.

Unclassified Area: Out of the total geographical area of India of 326.8 million hectares, the reporting area in 1964-65 was 305.9 million hectares or 93.2 per cent. Thus a total of 20 million hectares remained as non-reporting. Besides the hill, desert and inaccessible areas, the non-reporting areas include those under specialised forms of land tenure which are not reporting because land records are not maintained or are surveyed but remained unestimated.

Net Area Sown: The net area sown in 1964-65 was 138 million hectares (or 45.1 per cent of the land area of the country). The area sown more than once accounted for 20.2 million hectares, that is, 12.8 per cent of the net sown area. These two categories together comprise gross area sown, which was estimated at 158.1 million hectares in that year. The net area sown has recorded an increase of 19 million hectares during the period 1950-51 to 1964-65. Out of this, nearly 5.8 million hectares were accounted for by a single State of Rajasthan where the reporting area itself has increased considerably.

The significant fact brought about by the size of total cultivated area is the low percentage of areas sown more than once. The physical factor of temperature is not unfavourable in India to continuous plant growth. On the contrary, it should permit uninterrupted cultivation throughout the year. The main limiting factor is the deficiency of moisture. The concentration of rainfall in a short period of two to three months in most parts of the country makes it difficult for the crop to obtain adequate moisture throughout the year; they have to depend either on irrigation or sub-soil moisture, in both of which India is deficient. The insufficient application of manures and fertilizers is also a contributing factor to the low level of fertility of most of the crop lands reported. The scope for increasing the area that can be sown more than once would obviously depend on the speed with which irrigation works are extended and facilities provided for continuous and adequate water supply and on the measures taken to condition the soil to the normal level of fertility by a judicious application of manures and fertilizers.

DISTRIBUTION OF SOWN AREA

The regional variations in the sown area are mainly determined by the physical conditions of climate, topography and soil. The Indo-Gangetic plains and the plains along the East and West Coasts record the highest percentages. As much as 80 to 90 per cent of land is under cultivation in many parts of these plains; on the other hand, the percentage is substantially low, 10 or even lower, in mountainous or arid areas. The five States of West Bengal, Gujarat, Maharashtra, Uttar Pradesh and Punjab together account for about 44 per cent of the net area sown in the country though they form only 20 per cent of the total land area. The proportion of sown area in these States varies between 55 and 60 per cent. The percentage of area sown more than once is also higher in these States than in most other parts of the country, ranging from about 25 in the Punjab to more than 28 in Bihar when compared to the average of 13 for the whole country. The proportion of cropped area to the total in the States of Peninsular India is much lower than in the plains and varies from 30 to 50 per cent. In Madhya Pradesh, the percentage of cropped land is 40, in Andhra Pradesh 44 and in Madras 53. In mountainous areas and arid zones, the acreages under crops are low ranging between 10 and 20 per cent of the land area. In Kutch, the proportion is as low as 7 per cent.

CROP PRODUCTION

Food Crops and Non-Food Crops

The relative importance of the main crops in Indian agriculture is shown in Table IV. Food crops including fruits, vegetables, pulses, etc., cover 79.5 per cent of the total cropped area in 1964-65 and are primarily grown for consumption within the country. Non-food crops include some of the principal cash crops, such as cotton, jute and other oilseeds. The commercial crops of this variety occupy only 20.5 per cent of the cropped area while the plantation crops account for 0.8 per cent of the area cultivated. Among the food crops, cereals account for 59.4 per cent of the total area and the staple crops, rice and wheat form about 31.2 per cent of the area under cereals. Despite the decline in the per capita sown area resulting from the relatively faster

TABLE IV

CROPPING PATTERN

(in thousand hectares)

Crop	1964-65
Rice	35,930 (22.7)
Wheat	13,421 (8.5)
Jowar	18,151 (11.5)
Total Cereals	93,941 (59.4)
Gram	8,922 (5.6)
Total Pulses	24,319 (15.4)
Total Foodgrains	118,260 (74.8)
Sugarcane	2,362 (1.5)
Condiment and Spices	1,670 (1.1)
Total Fruits	1,305 (0.8)
Potatoes	425 (0.3)
Total Vegetables	1,637 (1.0)
Groundnut	7,056 (4.5)
Total Oilseeds	13,392 (8.5)
Cotton	8,308 (5.3)
Jute	831 (0.5)
Other crops	9,913 (6.2)
Total Cropped Area	158,103 (100.0)
Area sown more than once	20,187 (12.8)
Net area sown	137,916 (87.2)

Note: Figures in brackets indicate percentages to total cropped area.
Source: Indian Agriculture in Brief, *op. cit.*, pp. 40-41.

rate in growth of population, the per capita area under non-food crops has increased and has consequently materially reduced the per capita acreage under food crops. However, during the Second World War period there was a large diversion of area from non-food crops to food crops under the regulative measures of the Grow More Food Campaign.[33] Even in the war period, the reduction in the acreage of non-food crops was mainly noticeable in the case of cotton and jute. Other crops showed remarkable stability in maintaining the acreage, while the area under oilseeds actually showed a tendency to increase.

The most important food crop throughout the greater part of India is rice. It is the chief diet of the inhabitants of Bengal, Assam, Bihar, Orissa and Madras. The area under rice is 22.7 per cent of the total cultivated area yielding a gross output of 35 million tonnes in 1965-66. Wheat which has a nutritive value higher than that of rice, has a relatively restricted consumption, and forms part of the usual diet of the people in the northern States of Uttar Pradesh and Punjab and the adjoining tracts. The area cropped under wheat is 13.4 million hectares or about 8.5 per cent of the total area and provides about 12.8 million tonnes of grain in 1965-66. There are several species under the general head of 'millets' which are also consumed by the low income groups of the agricultural population as staple diet. Of this, jowar or larger millet (*Andropogon sorghum*) and bajra or bulrush millet (*Pennisetum typhoideum*) and *ragi* or buck wheat (*Eleusine corana*) cover significant acreage. These are comparatively coarse, inferior and cheap grains. The increase in the output of food crops between 1910 and 1951 was in fact under these low nutritious cereals. The production of bajra went up by 101.8 per cent, that of barley by 139 per cent and of jowar by 146.7 per cent, while the production of rice during the same period declined by 16.2 per cent and wheat by 39.5 per cent. In fact there were violent fluctuations in the production of wheat

33 Economic opinion is divided on the issue whether during the war period the diversion from non-food crops to food crops was actually the result of Government measures under the Grow More Food Campaign or the inter-action of normal commercial factors. See V. K. R. V. Rao, "Grow More Food Policy in India," *Indian Journal of Agricultural Economics*, Volume IV, No. 1, March, 1949, p. 239.

from 1912 to 1922 and a gradual decline till 1927-28. There has been a slight upward trend only thereafter.

Fruits and vegetables are useful protective elements in the diet of the people. The area under fruits and vegetables is only 2.9 million hectares or 1.8 per cent of the total sown area. The climatic diversity however makes it possible to grow several kinds of tropical and semi-tropical fruits in the country. In Kashmir, North-western regions and Punjab, apples, peaches, cherries and apricots are grown. The Madhya Pradesh and to some extent Assam are well known for growing oranges. In the plains of Uttar Pradesh, Bihar and West Bengal, Madras, Maharashtra and Gujarat, mangoes and bananas are grown. The output of fruits and vegetables increased from about 20,000 tons at the end of the First Plan to about 40,000 tons in 1960-61 and was expected to rise to about 100,000 tons by the end of the Third Plan.[34] At the present level of production, the per capita availability of fruits and vegetables is reckoned at about 1.5 and 1.0 oz. respectively. These are quite inadequate compared to the minimum nutritional requirement of 3 ozs. of fruits and 10 ozs. of vegetables per capita.

Extension of Cultivation

The extent of the area classed under 'current fallows' and 'other uncultivated land excluding current fallows' would give an indication of the potentialities for extension of cultivation in India. The area under 'permanent pastures' and 'other grazing lands' as well as the area under 'miscellaneous tree crops and groves' may not be available for cultivation. However, the area reported under 'culturable waste' and the fallow lands can be brought under cultivation. The cultivable waste land is estimated at 17.4 million hectares or 5.6 per cent of the classified area. The proportion of such lands available for cultivation in 1958-59 was as high as 26.8 per cent in Rajasthan, 14.3 per cent in Andhra Pradesh, 10 per cent in Madhya Pradesh, and 6.2 per cent in Uttar Pradesh. According to the Planning Commission, the total area that can be reclaimed from this class is reported

34 Third Five-Year Plan, *op. cit.*, p. 320.

to be only 6.07 million hectares of which about two-fifths is in the region of Madhya Pradesh and the remainder, mostly in Rajasthan. As regards current fallows, the five States of Andhra Pradesh, Gujarat, Maharashtra, Rajasthan and Bihar record the largest acreage and account for about 60 per cent of land under this class.[35]

The Government of India constituted in June, 1959, a Committee to make a survey of land classified "as other uncultivated lands excluding fallow lands" and "fallow lands other than current fallows" and to locate areas where large blocks of land are available for reclamation and resettlement. The Committee has completed its survey of seven States. In these, the area of waste land available for cultivation in blocks of 250 acres or more is reckoned nearly at a million acres. According to the Committee, the existing data are not sufficiently reliable and lands classified as culturable waste at the time of settlement often continue to be shown as such in the revenue records long after they have come under cultivation. The Committee has, therefore, recommended that rapid reconnaissance surveys should be conducted for collecting detailed information about the types of waste lands, the ownership of such lands, their availability in sizable blocks and the cost of reclamation measures. To sum up, there are large gaps in the information at present available regarding land resources. To secure quick results it is necessary that land surveys using photogrammetric techniques should be undertaken and data on land use, land improvement, reclamation of water-logged saline and alkaline lands and productivity should be collected in a systematic manner with a view to drawing up further plans.

It is difficult to draw any definite conclusion on the scope for extension of cultivation on the basis of the data available. At best, the points bearing on this question can only be indicated: (i) the possibilities of reclaiming areas for cultivation from unclassified areas (situated mostly in arid, mountainous or other regions of low productivity) are limited; (ii) similarly, there can be no

35 It is difficult to determine the extent of lands recorded as fallow due to physical conditions or the nature of farming in the years prior to 1950-51 when the new method of classification has been introduced.

reclamation from the areas classified as 'not available for cultivation; (iii) there can be no further encroachment in the forest areas as there is a positive need for extending the area under forests than curtailing it; and (iv) under the areas 'other uncultivated lands and current fallows,' the actual possibilities are determined by the factor of cost and the provision of irrigation facilities and State aid and disease control. In the short-term, it may be possible to reduce the area under current fallows by adopting a better system of rotation of crops. Extension of cultivation may also be facilitated by the extension of irrigation and adoption of dry farming system. Consolidation of holdings or cooperativization of small farms too may release some land for cultivation of crops. Further, measures like controlled grazing and soil conservation practices on common village land and village forests may also help to augment the supply of land for crop cultivation. However, all these measures put together is not likely to lead to any substantial additions to land under crops.

CHAPTER II

POPULATION

The significance of population for economic development needs hardly any emphasis. India's population is already rather large in relation to her resources, particularly agricultural land. It has also shown a potentiality for a rapid growth in the near future. Obviously, a higher rate of population growth would mean that a larger proportion of a given investment will need to be devoted to the production of essential consumer goods at the expense of investment goods industries; this would result in slowing down the process of development. The pace at which the economy will develop seems to be thus conditioned by, among other things, the rate of population growth.

The important characteristics of the Indian population may be discussed conveniently under three aspects, namely, the size of the population, its growth rate and its age distribution.

SIZE OF THE POPULATION

The population of India, according to the 1961 Census, was 439 million and is estimated at 499 million in 1966.[1] Of the total world population of 3285 million in 1964 no fewer than 1825 million or 56 per cent were in Asia.[2] A large proportion of Asia's millions were distributed in five countries. China, Japan, Indonesia, India and Pakistan, which together accounted for about 1466 million or 45 per cent of the world population. As a single country India holds the second place in the world, the population of the People's Republic of China having been estimated as 690 million in 1964. Thus the population of the Indo-Pakistan continent is not very far behind that of China, while in respect of persons per unit of area, this continent is probably more densely settled than any other comparable area in the world. Every seventh person in the world is an Indian.

1 Including Goa, Daman and Diu.

2 Data for 1964 are United Nation's estimates; see U.N. Demographic Year Book, 1965 (1966).

THE GROWTH OF POPULATION

Table I presents the data relating to the growth of population for the Indian Union territory since 1901.

TABLE I

GROWTH OF POPULATION IN INDIA: 1901-1961

Census year	Population (million)*	Increase (+) Decrease (—) during preceding decade (million)	Decennial per cent variation
1901	236.3		
1911	252.1	+15.8	+ 5.73
1921	251.4	— 0.7	— 0.31
1931	279.0	+27.6	+11.01
1941	318.7	+39.7	+14.22
1951	361.1	+42.4	+13.31
1961	439.2	+78.1	+21.50

*Population figures adjusted to the Indian Union Territory of 1961; for details of limitations, etc., See Census of India, Paper No. 1 of 1962, 1961 Census—Final Population Totals, Government of India (1962).

Thus during the sixty-year period 1901-1961, India's population, not counting Jammu and Kashmir, has increased by more than 84 per cent. While the first twenty years (1901-21) saw a net growth of only about 5 per cent, the next twenty-years (1921-41) witnessed a growth of about 27 per cent over the 1921 population, and the last twenty-years (1941-61) of about 38 per cent over the 1941 population. The Census Commissioner for 1951 called the year 1921 "the Great Divide," implying thereby that it marked a turning point in the history of India's population. While India's population was almost stationary during the period 1901-21, increases in subsequent decades were beyond anything previously experienced; particularly the growth rate of more than 21 per cent during the decade 1951-61 has been described as phenomenal. On the basis of the average rates of increase, it can be seen that population increased between 1901-21 at the rate of only 3.2 per cent per decade, whereas between

1921-61, the increase was at the rate of nearly 18.7 per cent per decade.

The main reason for rapid growth after 1921 is also clear enough. Till 1921, the high level of birth rates was also accompanied by relatively high death rates; the latter were a result of famines brought about by crop failures and also the incidence of major epidemics. The period subsequent to 1921 is characterised by an absence of such major calamities, partly as a result of substantial reduction in the incidence of famines and partly because of improvements in public health which eliminated the recurrent epidemics. After 1921, therefore, a high level of birth rates has apparently been associated with a relatively lower level of death rates thus resulting in a higher rate of increase in population. This fact is clearly brought out by the data, presented in Table II, relating to average birth and death rates for inter-censal decades.

TABLE II

AVERAGE ANNUAL BIRTH AND DEATH RATES: 1901-1961

Decade	Births per 1000 population	Deaths per 1000 population
1901-11	51.3	43.1
1911-21	49.2	48.6
1921-31	46.4	36.3
1931-41	45.2	31.2
1941-51	39.9	27.4
1951-61	41.7	22.8

Population Growth and Industrialisation

The increments in population since 1921 have thus been regarded as startling when compared to previous record. This fact should not, however, lead one to the conclusion that the increase in population has been responsible for economic stagnation of India. For, judged by normal standards, the rate of population growth in India, say, before the inception of planning in 1951, has not been very high. During the period 1921-51 the annual

rate of population growth was of the order of 1.25 per cent. It is only during the last decade that the increase of population has been rather high at more than 2 per cent. The rate prior to 1951, in fact, is almost comparable to the rate of Western Europe for the last 100 years or so. For instance, the increase in England and Wales over the 60 years before 1941 was 44 per cent.

According to some scholars, the alarming aspects of the population problem is, perhaps, not so much the absolute increase in the size of population during the first half of this century, but the fact that the increase in population has not been accompanied by an adequate increase in the rate of industrialisation comparable to, say, that of Europe or the U.K. However, the large absolute increase does have an adverse effect on the man-land ratio in the agricultural sector as well as the country as a whole. Further, it becomes a gigantic task to absorb a large number of new entrants into the working force in the non-agricultural sector. The high birth rates which have been prevailing in India, as in most other under-developed countries, lead to a "young" population in which the population of working ages tends to be a relatively low proportion of the total, and the burden of dependants tends to be high. This latter fact restricts considerably the ability of the economy to generate the savings necessary for rapid industrialisation. As a result, agriculture continues to be the chief employer of the working force.

INDUSTRIAL DISTRIBUTION OF WORKERS

The preponderance of agricultural employment in India is evident in Table III which shows the distribution of persons working in rural and urban areas and in the country as a whole, by sex, among the different industrial categories. These data from the 1961 Census show that nearly 72 per cent of the workers are engaged in agricultural activities or what is called the 'primary sector.' In developed countries of the West, on the other hand, this sector employs between 6 and 20 per cent of the total workers.

Changes in the definitions and classification adopted in successive censuses render difficult the task of compiling a historical series to compare the industrial distribution of workers over

TABLE III

PERCENTAGE DISTRIBUTION OF THE WORKING FORCE IN INDIA AND IN RURAL AND URBAN AREAS, BY INDUSTRIAL CATEGORY AND SEX: 1961

Industrial category	India—Total			Rural India			Urban India		
	Persons	Male	Female	Persons	Male	Female	Persons	Male	Female
I. Cultivators	52.8	51.4	55.7	60.3	61.1	58.9	6.5	5.6	12.1
II. Agricultural Labourers	16.7	13.4	23.9	18.9	15.8	24.8	3.5	2.2	10.5
III. (a) Livestock, Forestry, Fishing, Hunting and Plantations, Orchards, and Allied Activities	2.3	2.5	1.7	2.4	2.7	1.7	1.7	1.7	1.9
(b) Mining and Quarrying	0.5	0.6	0.3	0.4	0.5	0.2	0.8	0.8	0.8
IV. Household Industry	6.4	5.7	7.8	6.1	5.7	7.0	7.9	5.8	19.9
V. Manufacturing other than Household Industry	4.2	5.6	1.3	1.5	1.9	0.7	21.0	22.9	9.9
VI. Construction	1.1	1.4	0.4	0.7	0.9	0.3	3.7	3.9	2.5
VII. Trade and Commerce	4.0	5.3	1.4	2.1	2.6	1.0	16.3	18.0	6.8
VIII. Transport, Storage and Communications	1.6	2.3	0.1	0.5	0.8	0.03	8.0	9.3	1.2
IX. Other Services	10.4	11.8	7.4	7.1	8.0	5.4	30.6	29.8	34.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of workers (million)	188.4	129.0	59.4	162.0	106.6	55.4	26.4	22.4	4.0
Population (million)	439.2	226.3	212.9	359.8	183.3	176.5	78.8	42.7	36.1

Source: Census of India, Paper No. 1 of 1962, 1961 Census—Final Population Totals (1962).

time. However, a series prepared on the basis of the 1961 Census definitions and classification shows that the workers in the agricultural sector have constituted more than 70 per cent of the total working force throughout the present century. Even the massive investments in industries and other non-agricultural activities that have been made since the advent of economic planning have not had much effect on the employment pattern.

Between 1951-61, the percentage of the working force engaged in the primary sector has declined only by 0.34 points but that in the secondary sector (including mining and quarrying, household industry, other manufacturing activities and construction) has increased by 1.57 points to 12.19. The tertiary sector, which has been subject to a number of qualitative changes now employs a slightly lower percentage of the working force than in 1951.

As is to be expected, there are marked differences in the industrial distribution of the working force in rural and urban areas. In rural areas nearly 83 per cent of the workers are engaged in the primary sector. Employment in the secondary sector is largely in the household industry. Even in the tertiary activities, retail trade, public and medical and health services, education and other miscellaneous services employ a large majority of the workers in the sector.

In the urban areas, on the other hand, only 11.7 per cent of the working force is engaged in agricultural activities. In fact, one may be surprised that this percentage is as high as it is. The explanation lies in the vegetable gardens close to urban areas, the inclusion of rural fringe within the administrative boundaries of urban centres and the classification of gardeners and workers on public parks, etc., in the categories of the primary sector. One-third of the workers in urban areas are employed in the secondary sector and most of them in non-household manufacturing, reflecting the concentration of the organised industry in urban areas. Nearly 55 per cent of the urban workers are engaged in the tertiary sector, the main activities being retail and wholesale trade, transport, communications, public services, education, and domestic service. It is interesting to note, however, that of the total non-agricultural workers in the country,

numbering 53.1 millions, more than half (29.8 millions) work in rural areas.

The outstanding feature of the occupational pattern remains the preponderance of agricultural employment. The rate of population growth recorded during the past four decades has led to a considerable increase in the pressure of population on land. Despite the efforts to reclaim land and extend cultivation, the cultivated land has not increased *pari passu* with the increase in population. As a result, not only the available land per capita but also the amount of cultivated land per person engaged in agriculture has been steadily shrinking since 1921.

Density of Population

At this stage a word may be said about the density of population. The density of population varies from one area to another due to numerous factors, the impact of each of which cannot be clearly assessed. The more important factors affecting the density are the conditions of rainfall, availability of irrigation facilities, the configuration of land, fertility of soil and the development of resources in general. The 1951 Census attempted a scientific classification of natural zones into five broad regions purely from the point of view of topography. On the total area of 1,269,640 square miles there was in 1951 an average density of population of 285, about six times the world average. However the densities actually varied from below 6 in parts of Kashmir to 1,015 in Travancore-Cochin. Particularly in Cochin there were rural areas with as high a density of population as 2,000 or 4,000. Such dense rural concentrations are noticed only in China and Jawa. The high density sub-regions were the Lower Gangetic Plains, the Upper Gangetic Plains, Malabar-Konkan, South Madras and North Madras and Orissa Coastal Areas. The density varied from 461 in North Madras and Orissa to 832 in the Lower Gangetic Plains giving a total average density of 660 for the whole region. Thus, approximately one-half of the population of the country was concentrated on less than one-quarter of the area. This concentration may be possibly explained by the favourable topographical components of this region in point of incidence of rainfall and a favourable distribution of land among the different rainfall belts. The medium density sub-regions were the Trans-

Gangetic Plains, South Deccan, North Deccan, and Gujarat-Kathiawar; the average density here was 260 with a variation from 226 to 332. The low density sub-regions comprised the Desert Area, Western Himalayas, Eastern Himalayas, North-West Hills, North-Central Hills and North-East Plateau. The average density in this region was 129 with a range of variation from 192 to 61. On the whole, the six sub-regions covered a little less than half the area whereas the population was between one-fifth and one-fourth of the total population.

It is possible to account for the increase in population in these respective natural regions only in very broad terms based on the economic changes that have occurred during the last 50 years. The population increases in the higher density regions have been facilitated by the construction of extensive canal irrigation systems, growth of plantations in the Brahmaputra Valley, Cochin and Travancore, mining and industrial development in some of the regions and reclamation of waste lands. In the medium density regions also, the causes mentioned above might have operated and, therefore, a part of the increase in population is ascribable to them. As some of the sub-regions in this group were comparatively older among the settled regions, the scope for further development of land here might have been relatively small and, therefore, possibly the increase in population was correspondingly smaller. One significant feature is that all the high density regions have been old centres of civilization and have been populated densely from historical times. Other contributing factors affecting the density of population in different regions might be immigration of population, vagaries of the monsoon, recurring famines and epidemics.

The 1951 Census had also indicated that during the 30 years 1921-1951 population in North-West India was increasing at the fastest rate, closely followed by West and South India, while North (U.P.), East and Central India were growing by only two-thirds or less of the rates of the three regions. This trend was continued in 1961 by North-West, North (U.P.) and West India and even South India with the exception of Madras and Andhra Pradesh. Central India, freed from malaria and scarcity, also showed an upward swing, while East India recorded a remark-

able increase brought about by substantial immigration from Pakistan.

During the last decade population grew 62 per cent faster than the rate at which it grew during the period 1941-1951. The States which contributed more than others to this unprecedented increase are listed in Table IV.

TABLE IV

STATES SHOWING A RATE OF GROWTH OF 40 PER CENT OR MORE THAN THAT BETWEEN 1941-51

State	Rate of growth		Percentage increase of column (2) over column (3)
	1951-61	1941-51	
(1)	(2)	(3)	(4)
1. Assam	34.45	19.28	78.7
2. Bihar	19.78	10.27	92.6
3. Gujarat	26.88	18.69	43.8
4. Madhya Pradesh	24.17	8.67	178.8
5. Orissa	19.82	6.38	210.7
6. Punjab	25.86	0.21	12,214.3
7. Rajasthan	26.20	15.20	72.4
8. Uttar Pradesh	16.67	11.82	41.0
9. West Bengal	32.79	13.22	148.0

Source: Census of India, Paper No. 1 of 1962, 1961 Census—Final Population Totals, p. xii.

Although the areas of high increase are fairly distributed all over the country, there are appreciable variations in the rates of growth among Zones and States and even among well defined areas within a State. Not all the variations lend themselves to a ready explanation. Thus, one would have expected Kerala (24.76 per cent) with a high literacy rate and pressure of population to have grown at a lower rate as has apparently happened in Madras (11.85 per cent), where, apart from considerable out-migration from the State the birth rate is probably lower than in other parts of the country. Increases during the past decade in various States and even more spectacularly in the Union Territories present a picture of a basin filling up rapidly, not only in the depressions like Gujarat, Madhya Pradesh, Orissa or Rajasthan but even in

the rim like Assam, West Bengal and Punjab. The higher rate of increase in Assam may be explained by immigration of labour into plantations, mines, oil areas, railway and road projects as well as immigration from East Pakistan; in West Bengal the increase is due to the influx of displaced persons from East Pakistan, Tibet and Nepal and to the exceptional increase of population in centres of Railways and Communication, in industrial centres around Asansol and Calcutta and in the newly established industrial and multi-purpose project centres like Asansol, Durgapur, D.V.C., Mayurakshi basins.

The average density for the country as a whole in 1961 was 373 per square mile; the density varies from 1127 in Kerala or 1032 in West Bengal to 153 in Rajasthan or 124 in Himachal Pradesh.

Urbanisation

It is appropriate to note here that there has been a steady trend towards urbanisation of the Indian population even prior to the inception of planned development of the country. Even in this regard the pace of growth has been much quicker since 1921 than in any previous period. Data presented in Table V bring out the trend in urbanisation since 1881. It can be seen that in recent

TABLE V

TREND IN URBANISATION

(Population in million)

	1881	1921	1931	1941	1951	1961†
Total Population	250.2	305.5	338.2	388.8	361.2*	439.2
Urban	23.0	31.3	37.5	49.6	62.6	78.8
Percentage to total	9.2	10.2	11.8	12.7	17.3	17.94
Rural	227.2	274.2	300.7	339.2	298.6	360.4
Percentage to total	90.8	89.8	88.2	87.3	82.7	82.06

* Figure refers to the Indian Union.

† The definition of towns in the 1961 Census has changed.

Source: Compiled from the Census of India Reports.

decades urban population has tended to grow somewhat more than twice as fast as the total population. For instance, the rate of urbanisation during the decade 1931-41 was 31 per cent; this percentage rose to 40 during the next decade. This rate of urbanisation during 1941-51 was rather unusually high because of War and Partition. During the decade 1951-61, however, urban population has increased by about 26.5 per cent. This smaller rate of growth was partly because of the change in the definition of the town adopted for the 1961 Census. Thus, while at the 1951 Census the number of cities and towns was reckoned at 3,057, that in 1961 was reduced to 2,690 because of the application of more rigorous tests of towns. In spite of decrease in the number of towns, however, the total urban population estimated at 62.3 million in 1951 increased to 78.8 million in 1961. There was thus an increase of 16.5 million in the urban population despite the elimination of more than 300 places formerly recorded as towns.

Despite this pace of urbanisation, the percentage of rural population to the total is still as high as 82.03 (1961). This high percentage can be compared to that in developed countries such as U.S.A., U.K., France and Canada where it stands at about 36, 20, 47 and 36 respectively. In part, of course, the small proportion of urban population reflects the meagre development of large-scale industries. As can be seen in Table III, the population employed in the organised sector of manufacturing industries was only about 8 million or 4.2 per cent of the working population in 1961.

AGE DISTRIBUTION AND PROSPECTIVE GROWTH

Another important characteristic of the Indian population is what can be called as heavy youth dependency. Something of the order of 40 per cent of the total population is in the age group of 15 years and below, a little less than 60 per cent is in the age group of 15-64 and a small fraction of 2.3 per cent falls into the group of 65 years and above. The general picture presented by the structure of the population is one of a broad-based pyramid that tapers rapidly with age. This pattern of age distribution which has characterised the population all along this century has certain important economic implications. At the outset this distribution implies that the productive population constitutes a relatively

smaller proportion of the total population. For instance, the population of working ages, *i.e.*, in the group of 15-59 years, formed in 1961 hardly 54.5 per cent of the total. The actual working population was of the order of about 43 per cent of the total population.[3] It, therefore, follows that the extent of dependency on the income earners is very much high. Such high dependency ratio which generally characterises the population of many underdeveloped countries increases the pressure of consumption on the average income per earner and thereby reduces the savings potential. A high dependency ratio thus acts as a restraint on the potential pace with which the economy can develop.

The heavy youth dependency has also an important implication for the future trends in population growth. According to Sundburg the number of persons in the age group 0 to 14 years per 1,000 population should be around 400, 330 and 200 in progressive, stationary and regressive population respectively. Judged by this criterion, the number of 410 in this age group for India goes to emphasize that the population is still progressive and youthful. It can be thus argued that the possibilities of accelerated growth have not yet been exhausted despite the unprecedented growth recorded during the last decade.

Moreover, mortality rates can and will decline further, although probably at a slower pace. Unless fertility rates decline simultaneously, and at a rate higher than that of decline in mortality rates, the growth rate of the population holds prospects of a further increase. If fertility rates remain at their present level, the higher rate of growth will lead to a somewhat younger age distribution than at present and the burden of dependants is likely to rise further. There will, however, be an almost immediate relief in this respect if the fertility rates show some decline.

Projections of Population: 1976

It is very difficult to provide any dependable projections of the future population growth. Changes in birth and death rates are known to be of a most complex nature. In India stress is already being laid on family planning but it is difficult to decide how effective such efforts would be over the next 10 or 15 years.

3 The working age adopted for the 1961 Census was 15-59 years, while for the 1951 Census the age-group was 15-64.

However, it is nonetheless desirable to have some indications of the future trend in population growth. A study group assisted by the Registrar-General and the Central Statistical Organisation has prepared the estimates of the likely population for the next 15 years.[4] These estimates are given in Table VI.

TABLE VI

ESTIMATES OF POPULATION GROWTH FOR 1966, 1971 AND 1976

(million)

Year	Total population	Male	Female
1961	439.2	226.3	212.9
1966	491.5	252.7	238.8
1971	554.7	284.8	269.9
1976	625.1	320.2	304.9

Source: Third Five-Year Plan, p. 751.

These population projections, based as they are on some assumptions, are somewhat speculative in character and therefore the actual growth of population may deviate from the above figures; and yet, the projections bring out the enormousness of the task involved in providing for such a huge population. In such conditions a large part of the increase in output would be absorbed by the growth of population. That is why the Third Plan has emphasized that "the objective of stabilising the growth of population over a reasonable period must, therefore, be at the very centre of planned development. The programme of family planning involving intensive education, provision of facilities and advice on the largest scale possible and widespread popular effort in every rural and urban community has, therefore, the greatest significance."[5] The appeal for family planning is based not merely on quantitative considerations but also qualitative factors; "family limitation or spacing of the children is necessary and desirable in order to secure better health for the mother and

4 For details see Third Five-Year Plan, Planning Commission, Government of India (1961), p. 750.

5 *ibid.*, p. 25.

better care and upbringing of children. Measures directed to this end should, therefore, form a part of the public health programme."[6] Before reviewing the progress made in the programme of family planning, it is necessary to discuss briefly the question of public health.

HEALTH AND EFFICIENCY

The efficiency of work either in agriculture or industry is determined by the energy and capacity of the working population. The latter are largely the products of the state of public health in the country. Ensuring a certain minimum of physical well-being and creating conditions favourable to greater efficiency and productivity is, therefore, part of a more positive population policy.

Reference has already been made to the substantial decline in death rates particularly since 1921. In a way this in itself is a reflection of the achievements of the country in banishing the famines and also in improving public health. Along with the substantial reduction in the incidence of famines and scarcity, the control of epidemic diseases has made rapid strides since 1918. The most spectacular programme, the one that no doubt made a most immediate impact on mortality rates, was the nation-wide anti-malaria campaign. Malaria used to claim two million deaths every year prior to 1951. The anti-malaria measures undertaken during the first two Five-Year Plans have resulted in a marked decline in the annual incidence of the disease from 75 million cases in 1952-53 to about 10 million cases in 1960-61; by 1965, the decline in its incidence was 99.5 per cent. In controlling other communicable diseases like filaria, tuberculosis, leprosy and venereal diseases also appreciable progress has been made. Although the incidence rate of tuberculosis has remained more or less the same both in rural and urban areas, mortality from this is showing signs of decline. A massive B.C.G. campaign has effectively tackled T.B.; by the end of the Third Plan about 221 million persons were tested under the B.C.G. campaign and 81 million vaccinated. Survey, education

6 First Five-Year Plan (1953), p. 522.

and treatment (SET) centres for leprosy were introduced in the Third Plan; it is proposed to establish 100 leprosy control units, 2,000 SET centres and 6 training centres for non-medical assistants under the Fourth Plan. While plague is now practically a thing of the past, cholera and smallpox are quickly contained wherever detected. A more important positive development for rural population is the fact that by 1965-66 about 4,800 primary health centres have been established covering most of the development blocks.[7] However, infant mortality rate is still very high, estimated at about 146 per thousand during 1958-59 in rural India, compared to 22 per thousand in England during the same period. Similarly, maternal mortality in India is estimated at 12.4 per thousand live births which is also very high. The overall improvement in public health is reflected in the data relating to expectation of life which has gone on increasing from 27 years in 1921-31 to slightly more than 45 years in 1961 and is reckoned at 50 years during 1965-66.[8]

The reduction in the rate of mortality is, however, only half the battle; the other half, the rather undramatic part, of the battle consists in lowering morbidity rate which is still high. Here it is mainly a question of making up nutritional deficiency and thereby reducing the vulnerability to diseases. The broad features of the problem of nutrition are well-known. Generally in most parts of India the diet is composed of cereals and is lacking in protective and body-building foods such as milk, meat, eggs, vegetables and fruits. The Diet Survey undertaken between 1935-48 at the instance of the Indian Council of Medical Research indicated that "the average diet of an Indian is lopsided primarily because of its high cereal contents. The other noticeable feature is that the diet lacks in adequate amounts of protective foods leading to inadequacy and very often to total lack of proteins of good quality. Inadequacy of minerals and loss of the important vitamins in varying degrees is the other important feature."[9] This serious malnutrition is obviously an important

7 Fourth Five-Year Plan — A Draft Outline, Planning Commission, Government of India (1966), pp. 340-342.

8 *ibid.*, p. 346.

9 For a detailed discussion of the problem of nutrition, see the Chapter on "Food Supply and Nutrition."

cause of high infantile, maternal and general morbidity rates in India. Of course, if the aim is to provide a nutritionally adequate diet to the entire population, this would pose the more basic problem of the large gaps between the requirements so assessed and the available surpluses.

FAMILY PLANNING

In an already thickly populated country like India an increase in population or manpower resources does not strengthen the economy but in fact weakens it. Unless, therefore, measures are initiated to bring down birth rate and thereby reduce the rate of population growth, obviously, an increasing amount of effort on the part of the community will be used up only in maintaining the existing standards of living. Thus, "a rapidly growing population is apt to become more a source of embarrassment than of help to a programme for raising standards of living."[10] Adoption of a programme of family planning is, therefore, an essential condition for securing a more rapid rise in living standards. Fortunately, enquiries conducted regarding the attitudes of the rural population towards the acceptance of the birth control techniques have revealed that there is no serious psychological or sociological resistance to such techniques. The programme of family planning has assumed a greater sense of urgency in view of the rapid growth of population witnessed during the last decade. Great stress was, therefore, laid on the programme in the Third Plan in which a provision of Rs. 27 crores was made. The programme involved intensive education, provision of facilities and advice on a large scale and widespread popular effort. Within the programme of family planning, sterilisation undertaken on the basis of voluntary choice has also a valuable contribution to make. The success attained in the sterilisation campaign in the rural areas of Maharashtra has been very encouraging. With a view to reducing the birth rate from 40 per thousand at present to 25 per thousand as expeditiously as possible, the outlay on family planning has been stepped up to Rs. 95 crores in the Fourth Plan. The programmes envisaged include the recruitment and training of doctors and other workers

10 First Five-Year Plan, *op. cit.*, p. 23.

at various levels to implement the campaign of family planning and the provision of supplies and services that go with it. Although it is intended to promote all methods of contraception, emphasis is being laid particularly on the intra-uterine device (IUCD) because of its efficacy, reversibility and acceptability. Steps have already been taken to start the manufacture of loops for the IUCD programme. Since the active participation of voluntary agencies is essential to the successful implementation of the programme, measures are being taken to associate local leadership both in the rural and urban areas.

The ultimate aim of all these programmes is to reduce the country's population growth from its present level of 2.4 per cent per annum to about 1 per cent by 1976. To what extent the programme will be effective in reducing the birth rates will of course depend upon the ability of the administration to arouse the interest of the rural population and instil among them a strong motivation towards family limitation and also the extent of resources allocated for the provision of various facilities.

CONCLUSION

The main features of the Indian population could now be summed up. In the first place, the present size of the population is rather large being the second largest among the national populations of the world. Secondly, the density of population is very much larger than in any of the other countries with extensive land areas like Russia, U.S.A., Australia, Canada and Brazil. The occupational distribution of population shows a heavy dependence on agriculture despite efforts at industrialisation in recent decades. In the context of the large size, the faster rates of population increase recorded since 1921 have lent a sharper edge to the population problem. The rapidity of the population growth is primarily due to the abolition of famines and epidemics which were mainly responsible for keeping the population at an almost stationary level prior to 1921. Thus, although birth rates have been apparently subject to only slight variations, a major change has come about in respect of death rates. It is against this background that the prospects of growth in the near future have to be assessed; it seems that the potentialities for rapid growth are inherent in the age-structure of the population itself.

The age-structure also implies a heavy youth dependency which is likely to persist for a considerable length of time. Some estimates made about the prospective size of the population indicate that the population may reach as high a level as 625 million by 1976. The question that, therefore, needs to be asked is: would it be possible, with the given agricultural resources, to provide for such a large population? Although there are potentialities for increasing the food supply substantially, this does not mean that fears about population growth are wholly mistaken. A reduction in the birth rates from the present high levels has immediate economic advantages, irrespective of the question of how many people it would be possible to maintain with India's agricultural resources. The pace of economic development depends on the diversion of resources from consumption to investment which raises the output. A population with a high ratio of dependency consumes more of a given output and devotes less to investment. Thus, high fertility, which produces a high level of dependency, promotes consumption at the expense of investment. Moreover, there is also the equally important need to improve the quality of population by providing a nutritionally adequate diet. In this context, therefore, the programme of family planning has been accepted as part of economic development plans for the country. Field investigations have also shown that the rural population is responsive to efforts in this direction. That the outlay on the programme has been stepped up from Rs. 27 crores in the Third Plan — itself a sizable amount — to Rs. 95 crores in the Fourth Plan, shows the seriousness with which the problem is being tackled.[11] Whether the ultimate aim of reducing the birth rate by any appreciable margin will be achieved would seem to depend upon the ability of the administration to create a consciousness of the problem among the rural population. In a way, a slower rate of growth of India's population would tend to ease the problem of economic development itself.

11 The Department of Family Planning has proposed an additional outlay of Rs. 144 crores in the Fourth Plan for the intensification of the programme. Fourth Five-Year Plan—A Draft Outline, *op. cit.*, p. 348.

CHAPTER III

FOOD SUPPLY AND NUTRITION

Food supply in India has been inadequate both in quantity and in quality, which has led to the widespread prevalence of undernutrition and malnutrition in the country. Undernutrition refers to the insufficiency of the quantity of the diet. The continuation of undernutrition for a period of time results in loss of body weight for the same physical activity or to reduced activity for the same body weight, or both. In the case of children, undernutrition retards physical growth. Malnutrition which refers to the quality of the diet, arises from lack of adequate amounts of proteins, essential minerals and vitamins. Thus the diet may be quantitatively sufficient, but it may still be unbalanced, because it is composed heavily of cereals and starchy foods with too few of the protective foods such as meat, milk, fruits and vegetables. Malnutrition persisting for a long period impairs health and vitality and results in a variety of deficiency diseases. Malnutrition and undernourishment contribute to reduced resistance to diseases, aggravating their incidence, increased child mortality and a shorter span of life. They also adversely affect working efficiency of the population.

The inadequacy of the Indian diet, both quantitatively and qualitatively, has been pointed out in the past by various authorities. As far back as 1880, the Famine Commission in India estimated the output of foodgrains at 52 million tonnes and consumption at 47 million tonnes, thus leaving a surplus of 5 million tonnes; at the same time the Commission sounded a note of warning that excessive pressure of population on the land was resulting in inefficient cultivation. The Famine Commission of 1898 significantly observed that whatever may have been the normal annual surplus of foodgrains in 1880, the 'present' surplus cannot be greater than that figure. It is possible that, for a time, improved cultivation and extension of irrigation helped to main-

tain an equilibrium between growth of population and food supply but soon this balance was upset. In 1914, the Prices Enquiry Committee emphatically declared that population had increased by a larger percentage in the period under enquiry (1890 to 1912) than either the total area under cultivation or under foodgrains; in other words, the requirements of foodgrains for internal consumption had increased by a larger proportion than the total production of foodgrains. This, in the opinion of the Committee, was due to the substitution of non-food for food crops and the inferior quality of the new areas brought under cultivation which naturally meant a comparatively low productivity. The Famine Inquiry Commission of 1945 pointed out that 30 per cent of the Indian population did not get enough to eat in normal times, while the food of a great majority of the rest was unbalanced.

The earliest report on certain aspects of public health in rural areas in India was published nearly three decades ago. Sir John Megaw conducted an enquiry on food consumption in several Indian typical villages in 1933. The investigation showed that only 39 per cent of the people were adequately nourished, 41 per cent poorly so and 20 per cent came under the category of 'very badly nourished.' Bengal, with proportions of 22 per cent, 47 per cent and 31 per cent under these three classifications respectively, was the worst of all the regions. The main conclusions of the Report were (i) in nearly 40 per cent of the villages, the population was excessive in relation to the food supply, as a result of which India had a very poorly nourished population, (ii) the average span of life was less than half of what it might be, (iii) periods of food scarcity or famine occurred in one village out of every five during a ten-year period in which there was no exceptional failure of the rains, and (iv) in spite of the high death rate, the population had been increasing much more rapidly than the output of food and other commodities.

Even before the World War II, India was experiencing a sizable shortage of foodgrains. It was in the beginning of the third decade of the present century that India became a net importer of foodgrains. With the separation of Burma in 1937, India's imports of foodgrains increased gradually and in 1939

they totalled well over two million tonnes. They consisted mostly of rice from Burma.

TABLE I

IMPORTS AND EXPORTS OF FOODGRAINS: 1920-40

(in million tonnes)

Five-year period	(Average for five-year period) Imports	Exports	Net imports
1920-21 to 1924-25	1.14	0.98	0.16
1925-26 to 1929-30	1.59	0.83	0.76
1930-31 to 1934-35	1.84	0.57	1.27
1935-36 to 1939-40	2.07	0.69	1.38

Source: Census of India, 1951, Vol. I, Part I-A Report (1953), p. 166.

The increase in the net imports was mainly a result of the rapidly increasing population and the decline in the per capita area of cultivated land since 1921. The latter actually declined from 111 cents in 1921 to 104 cents in 1931 and 94 cents in 1941.[1]

Effects of World War II

The food situation in India became noticeably acute during the World War II, particularly after the cessation of imports of rice from Burma in 1942. With the pressure of war demands on the one hand and growing difficulties in mobilising available supplies, on the other hand, due mainly to increased hoarding by producers and traders, foodgrain prices increased sharply. Some of the factors responsible for the increased demand for food were: the additional requirements for a million evacuees and war prisoners and for a large foreign army stationed in India and the increase in internal consumption consequent on the new recruits to the army and the workers in the war industries consuming food in larger quantity than before the war. On the supply side, the position had definitely deteriorated. Further, there were transport bottlenecks which caused acute shortages in certain areas within the country. As the Central Government then hesitated to adopt any bold comprehensive policy, the seve-

1 Census of India, 1951, Vol. I, Part I-A Report, *op. cit.*, p. 141.

ral Provinces tried to tackle the problem without any co-ordinated plan. While efforts were made to grow more food, the net imports of foodgrains steadily decreased from 2.15 million tonnes in 1939 to 1.23 million tonnes in 1940 and 0.5 million tonnes in 1941. In 1942, exports exceeded imports by 0.2 million tonnes. The prospects of increased food production appeared uncertain as there was no definite policy initially for regulating relative prices or for increasing production effectively.

Government tried to evolve a policy of price control of foodstuffs through an extended process of trial and error. India had to go through the experience of failure of supplies, black market, hoarding and break-down of the distributive machinery. This was in contrast to the successful food policy adopted in various countries directly involved in the war. Price controls were adopted in a piecemeal manner and there was no co-ordination between the various provincial policies. Even after three years of conferences and debates, the Government of India were not in a position to take over the entire procurement operations and assure to every citizen adequate food at reasonable prices.

Bengal Famine

The failure of administration in India in the initial years of the war to meet the emerging situation created an unprecedented crisis in Bengal. The Bengal famine of 1943 was a tragedy which caused deaths of probably one and a half million people. Instances were recorded of sales of land in exchange for a week's supply of food. The famine meant a complete disruption of the socio-economic life of Bengal. The Commission under the Chairmanship of Sir John Woodhead which reported in 1945 revealed that the problem was not merely one of relief for the destitutes; it reflected a long-run maladjustment between the supply and demand for food. The Famine Inquiry Commission laid the blame not only on the Government of Bengal which ought to have taken steps to control supplies effectively and to distribute them at reasonable prices but also on the Government of India which ought to have established a system of planned movement of foodgrains from surplus to deficit Provinces. They concluded: "Society, together with its organisations, failed to protect its weaker members. Indeed,

there was a moral and social break-down, as well as administrative break-down."[2]

Effects of Partition

The Partition of the country in August 1947 aggravated the problem of food supplies in India. Of the total area of about 4.09 million square kilometers (1.58 million square miles) of undivided India, as much as 22.8 per cent went to Pakistan and only 77.2 per cent remained in the Indian Union. On the other hand, as much as 80.8 per cent of the total population of 417 million remained in the Indian Union, while only 19.2 per cent was in Pakistan.[3] Similarly, Pakistan obtained about 30 per cent of the total irrigated area of 28.3 million hectares (70 million acres) of undivided India. Of the total area of about 32.8 million hectares (81 million acres), and 14.2 million hectares (35 million acres) under rice and wheat respectively in undivided India, Pakistan got as much as 28 per cent and 30 per cent respectively. Thus in the case of these two major food crops, the position became relatively unfavourable to the Indian Union. Similar situation developed in regard to the two main commercial crops, namely, cotton and jute. Pakistan's share in the total area under them being 23 per cent and 76 per cent respectively As a result, India was faced in the immediate post-Partition period with the problem of aggravated shortages of foodgrains and raw materials.

CURRENT NUTRITION SITUATION

The information about the current nutrition condition of the people in India is available mainly from two types of sources. Food balance sheets which can be prepared from the figures of food production adjusted for trade stocks and non-food utilisation, provide useful data on the average *per caput* food supply for individual commodities at the retail level. They also show the contents of the average *per caput* food supplies in terms of calories and nutrients. However, food balance sheets do not provide any information on variations between different socio-economic groups in the country. Such information on the dis-

2 Final Report of the Famine Inquiry Commission (1945), p. 107.
3 C. N. Vakil: Economic Consequences of Divided India (1950), p. 69.

tribution of food within the population and the factors influencing it is available from diet surveys conducted by the Indian Council of Medical Research (ICMR).

Undernutrition

The daily average *per caput* calorie requirements as revised by the Nutrition Advisory Committee (NAC) in 1958 for the moderate level of physical activity are of the order of 2,250 to 2,300 at the retail level. The average daily protein allowance made by NAC works out to 62 grams per head. The actual food availability for the period 1956-59 which is estimated by P. V. Sukhatme,[4] after making necessary adjustments to the food balance sheet data, together with the calorie and protein contents are shown below:

TABLE II

PER CAPUT DAILY FOOD SUPPLIES FOR INDIA DURING 1956-59

	Quantity in grams	Calories	Proteins in grams
Cereals ...	375	1,324	30.8
Roots and Tubers ...	30	28	0.4
Pulses and Nuts ...	65	203	12.5
Sugarcane (*Gur*) ...	45	158	0.5
Vegetables and Fruits ...	80	30	0.9
Meat ...	4	6	0.5
Eggs ...	1	1	0.1
Fish ...	7	4	0.6
Milk ...	140	118	5.2
Oils and Fats ...	11	97	—
Total Calories ...		1,970	—
Total Proteins ...			51.5
(a) Animal Proteins			6.4
(b) Vegetable Proteins			45.1

Thus per capita supplies of calories and proteins available during 1956-59 work out to be 1,970 calories and 51 grams per day respectively as against the average per capita requirements

4 P. V. Sukhatme, "The Food and Nutrition Situation in India (Part I)," *Indian Journal of Agricultural Economics*, Vol. XVII, No. 2, April-June, 1962, p. 5.

of 2,300 calories and 62 grams of proteins per day. Table II also reveals preponderance of cereals which contribute as much as two-thirds of *per caput* calorie supplies and a significant deficiency of protective foods especially animal products which account for less than 7 per cent of the average calorie supplies. The diet surveys conducted by the Indian Council of Medical Research during 1935-48 and 1955-58 also confirm these findings.

TABLE III

COMPARISON BETWEEN A BALANCED DIET AND THE ACTUAL FOOD INTAKE IN INDIA

Items	Ounces per consumption unit per day		
	Balanced diet[5]	Average intake of food-stuffs in India	
		1935-48[6]	1955-58[7]
1. Cereals	14	16.62	16.59
2. Pulses	3	2.26	2.39
3. Vegetables:			
(a) Leafy	4	0.85	0.71
(b) Others	6	4.10	3.20
4. Fruits and Nuts	3	0.58	0.21
5. Sugar and Jaggery	2	0.67	0.71
6. Oils and Fats	2	0.92	0.52
7. Milk and Milk Products	10	3.31	2.81
8. Meat and Fish	3	0.94	0.47
9. Eggs	one egg		

It would be observed that except for cereals, the consumption of which was more than the quantity needed for a balanced diet, the average consumption of all the items was below the recommended levels of intake. The deficiency in the consumption of pulses and non-leafy vegetables is relatively small as

5 W. R. Aykroyd: The Nutritive Value of Indian Foods and Planning of Satisfactory Diets (Health Bulletin No. 23), Fifth Edition by V. N. Patwardhan and S. Ranganathan, Government of India (1956), p. 16.

6 Indian Council of Medical Research—Special Report Series No. 20: Results of Diet Surveys in India, 1935-48, p. 18, Table No. 1.

7 C. G. Pandit and K. S. Rao: Nutrition in India, 1946-58, Indian Council of Medical Research (1960), p. 20.

compared to the other items of the diet. The intake of protective foods like milk, meat and fish, eggs, fruits, etc., is very low in comparison with the recommended levels. Thus the average Indian diet is unbalanced primarily because of preponderance of cereals and a large deficiency of protective foods leading to inadequacy and very often to a total lack of good quality proteins.

The heavy dependence on cereals and the large shortage of animal products in the Indian diet is mainly due to the poverty of the people in India. Results of the Agricultural Labour Enquiries[8] conducted in 1950-51 and 1956-57 showed that in practically every part of the country the consumption of foodgrains in families with low income was considerably below that of somewhat better-off families living side by side and doing the same work. A large number of families was thus living on inadequate quantities of food, for want of adequate income. This is further confirmed by the data for Maharashtra, collected in the 14th Round of the National Sample Survey (NSS) in 1958, which are given below:

TABLE IV

CALORIE AND PROTEIN SUPPLY BY EXPENDITURE LEVEL MAHARASHTRA, 1958

Item	Monthly per capita expenditure in rupees							
	0-8	8-11	11-13	13-18	18-24	24-34	34 & above	Average
Total Calories	1.120	1.560	1.850	2.190	2.440	2.530	3.340*	2.100
Calories derived from Cereals	940	1.300	1.510	1.740	1.860	1.800	2,150	1.590
Percentage	84	83	82	79	76	71	64	76
Total Proteins in grams	30.7	45.0	52.8	60 4	66.3	71.7	85.7	59.7
Animal Proteins in grams	1.0	1.8	2.3	2.9	6.1	7.1	11.9	4.5

* This value appears unduly high. It is stated that this is partly due to the exclusion from the household size of guests and labourers taking meals.

Source: *Indian Journal of Agricultural Economics*, Vol. XVII, No. 2, April-June, 1962, p. 14.

8 Report on Intensive Survey of Agricultural Labour, Vol. I—All-India, 1950-51, Ministry of Labour, Government of India (1954), and Agricultural Labour in India: Report on the Second Agricultural Labour Enquiry, Vol. I—All-India, 1956-57, Ministry of Labour and Employment (1960).

Table IV shows that at low levels of total expenditure, the calorie supply is extremely small and that it is primarily derived from cereals which form the cheapest source of energy of the low income people. With the improvement in income, the calorie supply also improves and the dependence on cereals declines although even in the high income groups it still forms some two-thirds of the total calorie supply. The gradation is similar for total proteins and animal proteins. As income increases, the supply of total proteins as well as of animal proteins improves. The calorie supply approaches the desired level only when the monthly per capita expenditure reaches the range of Rs. 13—18, but even at this level, the intake of animal proteins is at the extremely low level of 3 grams per day. The significance of this observation can be seen when it is realised that the per capita income is under Rs. 18 per month in the case of over 60 per cent of the population of Maharashtra.

After analysing carefully the available evidence of hunger and undernourishment in India, Prof. M. L. Dantwala[9] in his article has appropriately pointed out that the root cause of these phenomena is poverty, due to lack of adequate gainful employment. He has particularly emphasized that in the absence of the organised system of social security like unemployment, old age or sickness allowance, it is the joint family system which helps to spread the shortages more evenly and converts hunger of some into undernourishment of many.

In the advanced countries like the U.K. and the U.S.A. on the other hand, there is no insufficiency of caloric supplies even in the lowest income groups. The wide gap as of the order of 300 calories between the *per caput* calorie supplies for the country as a whole and average calorie requirements indicates that a high percentage of population, particularly the poorer sections, suffer from undernutrition in India. By using the data available from the diet surveys conducted by ICMR during 1935-48, Sukhatme has estimated that about a quarter of Indian households was undernourished during 1935-48.[10] Similar diet surveys

9 M. L. Dantwala, "International Planning to Combat the Scourge of Hunger throughout the World," *Annals of Collective Economy*, Vol. XXXIV, No. 1, January-March, 1963, p. 77.

10 P. V. Sukhatme, *op. cit.*, pp. 1-28.

for the period 1955-58 show that the food consumption levels did not show any improvement during the intervening period. This is well brought out by the data given in Table III above.

The analysis of the food consumption data for Maharashtra from the 14th Round of the NSS also shows that as many as 40 per cent of the households did not attain the desired level of calorie intake of 2,350.

Malnutrition

Unlike the quantitative aspect, the qualitative aspect of nutritive value of a diet cannot be measured in terms of a single yardstick. Proteins, vitamins and minerals all enter into it, but the requirements of some of these have so far not been established. Hence, some indirect indicators have to be used to measure the extent of malnutrition. Sukhatme has used the following yardsticks in his analysis:[11] (i) the content of animal proteins in a diet, (ii) the proportion of animal proteins to total intake of proteins and (iii) the proportion of calories derived from cereals, starchy roots and sugar. When the intake of animal proteins or its percentage to the intake of total proteins is low or the percentage of calories derived from cereals, starchy roots and sugar is high, the diet is regarded as unbalanced and of poor quality. The *per caput* intake of proteins during the period 1956-59 has been estimated to be 51 grams as against the average daily protein requirements of 62 grams per head as revised by NAC. Of these, the intake of animal proteins at 6 grams *per caput* per day formed only 12 per cent. The calories from cereals, starchy roots and sugar also formed as high as 77 per cent of the total calories per head per day. From the 14th Round of the NSS data for Maharashtra and by using the yardstick of the proportion of calories derived from cereals, starchy roots and sugar, Sukhatme concludes his analysis by an observation that if conditions in Maharashtra are any indication of the extent of malnutrition in other parts of the country, then it appears that relative to the nutritional standards enjoyed by the well-fed countries, two out of every four people are malnourished in India. The undernourished are usually malnourished. On this basis, about 200

11 *op. cit.*, p. 23.

to 250 million of India's population are either undernourished or malnourished.

A continued undernourishment and insufficiency of specific nutritional elements in the Indian diet has led to the widespread prevalence, in the large sections of the population, of several deficiency diseases such as *kwashiorkor*, nutritional oedema, due to protein deficiency; Beriberi, night blindness and Bitot spots due to deficiency of Vitamin A; pellagra caused by the deficiency of Vitamin B; and anaemia resulting from iron deficiency. In many other cases, although continuous malnutrition has not resulted into any of these serious diseases, it has led to its consequential ill-effects on health, efficiency and longevity of the population of India.

EVOLUTION OF FOOD POLICY

Grow More Food Campaign

The evolution of food policy in India started with the Grow More Food Campaign. There used to be regular imports of rice from Burma, after its separation from India, ranging from 1½ to 2 million tonnes. When it became clear that the normal supplies from Burma would be cut off by Japan's entry into the War, a conference of representatives of the Provinces and the States which met in April, 1942 made certain recommendations for increasing food production in the country to offset the loss of normal imports of rice. These recommendations formed the basis for the GMF campaign. The main lines of action between 1943 and 1947 were (i) to switch over from cash crops, mainly from short staple cotton to food crops, (ii) to intensify cultivation of lands already under cultivation, through irrigation, better seeds and manure and improved farming practices, and (iii) to extend cultivation by bringing under the plough current fallows, cultivable wastes, etc. In this first phase, no target of food production was fixed.

The movement was placed on a planned basis from 1947-48 when it was decided to continue the GMF campaign for another five years. The target of additional production for the period was fixed at 4 million tonnes. The third phase followed the adoption of the recommendations of the Food Grains Policy Committee (1947). The Committee suggested a target of 10 million tonnes of increased production out of which 3 million tonnes were to be

achieved by the reclamation of about 4.05 million hectares (10 million acres) of land. They also suggested an organisational set-up based on village panchayats and co-operative societies to help in the production drive.

On a review of the food position towards the close of 1948 it appeared that the sense of urgency which was essential for the success of a programme of this magnitude had not been realised in the country and that a re-orientation of policy was necessary. On the advice of Lord Boyd Orr who was invited specially to review the working of the campaign, a definite process of co-ordination between the Centre and the States with wide powers to execute the programme was initiated by the appointment of a Commissioner of Food Production at the Centre and corresponding officers in the States. These were all assisted by sub-committees for taking quick decisions and for ensuring the implementation of policies without delay. The objective of this new policy was to attain self-sufficiency by March, 1952. The deficit to be made up by the target date was 4.8 million tonnes over the production in the year 1947-48. This was the fourth phase of the campaign.

When this programme of self-sufficiency was put into operation, an acute shortage of cotton and jute was felt owing to the devaluation of the rupee in 1949 and difficulties of getting raw materials from Pakistan. The policy had, therefore, to be revised with a view to achieving a simultaneous increase in production of foodgrains as well as of cotton and jute. This 'Integrated Production Programme' (June, 1950) envisaged a diversion of land from foodgrains to these crops to the extent of about 0.61 million hectares (1.5 million acres) in 1950-51 and 0.9 million hectares (2.2 million acres) in 1951-52. Subsequent additions were made to the scope of this scheme which included the reclamation of 1.2 million hectares (3 million acres) of land in seven years from 1949-50 under the Central Tractor Organisation. Besides, schemes relating to fisheries, subsidiary foods and crop competitions were added.

The Grow More Food Enquiry Committee set up in February, 1952 to examine the working of the Grow More Food Campaign came to the conclusion that the campaign had not achieved the result expected of it. The targets of additional production fixed

for the various phases of the campaign and the shortfall in achievement are indicated in Table V.

TABLE V

ACHIEVEMENTS AND TARGETS OF ADDITIONAL PRODUCTION UNDER THE GMF CAMPAIGN

Period	Target (in million tonnes)	Achievement (in million tonnes)
1947-48	0.909	0.697
1948-49	0.886	0.795
1949-50	0.985	0.811
1950 51	1.700	1.100
Total	4.480	3.403

Source: Report of the Grow More Food Enquiry Committee, Government of India (1952), p. 14.

A check on the results through special surveys showed that the output reported by the States was over-estimated by about 20 per cent. The actual increase was about 2.7 million tonnes instead of 3.4 million tonnes shown in the table.

Food Supply under the Plans

The integrated scheme of food production along with the recommendations of the Grow More Food Enquiry Committee was incorporated in the First Five-Year Plan and a target of 7.7 million tonnes of additional foodgrains, *i.e.*, an increase of 14 per cent over the foodgrains production of 54.92 million tonnes in the base year 1949-50,[12] was fixed to be achieved by 1955-56. The target was to be realised not only through the Grow More Food Schemes but also through major and minor irrigation projects and the programmes of Community Development and National Extension Service. In spite of fluctuations from year to year, there was evidence of expansion in foodgrains production, as shown in Table VI.

12 The foodgrains production for 1949-50 was taken as the base year as in 1950-51 the yield was not normal.

TABLE VI

FOODGRAINS PRODUCTION AND TARGETS: 1950-1966

(*in million tonnes*)

	Actual production				Targets of production		
	1950-51*	1955-56	1960-61	1965-66†	First Plan	Second Plan	Third Plan
Rice	23.54	27.56	34.57	30.66	27.7	32.5	45.7
Wheat	6.39	8.76	11.00	10.42	8.4	11.7	15.2
Other Cereals	16.83	19.49	23.74	21.15	17.4	24.9	23.4
Total Cereals	46.76	55.81	69.31	62.23	53.5	69.1	84.3
Pulses	8.16	11.04	12.70	9.80	9.1	12.7	17.3
Total Food-grains	54.92	66.85	82.02	72.03	62.6	81.8	101.6

* Data regarding foodgrains relate to 1949-50 which was the base year in respect of foodgrains for the First Five-Year Plan.

† Partially revised estimates.

Sources: Report on Currency and Finance for the Year 1966-67, Reserve Bank of India (1967), Statement 6 and Bulletin on Food Statistics, February, 1968, Directorate of Economics and Statistics, Ministry of Food, Agriculture, Community Development and Co-operation, Government of India (1968), p. 7.

As may be seen from Table VI, against the increase of about 7.7 million tonnes — 4.16 million tonnes of rice, 2 million tonnes of wheat, 1 million tonnes of gram and pulses and the balance in terms of other cereals — anticipated over the First Plan period, the actual production of foodgrains rose by 11.93 million tonnes or by 21.7 per cent to 66.85 million tonnes in 1955-56 over the base year level of 54.92 million tonnes. It may be noted that in the third year of the First Plan, foodgrains production (at 69.82 million tonnes) increased substantially and exceeded the Plan targets. The actual achievement at the end of the First Plan exceeded the target by 6.8 per cent. Rice showed the large increase in production, but the target of rice production could not be reached except in 1953-54. The target of wheat production was just realised. The production of other cereals exceeded the Plan target by a substantial margin.

While fixing the food production targets, the Second Five-Year Plan gave special consideration, among others, to the increase in the total population and the need to improve per capita consumption. Further, with its aim to diversify agricultural production, it also shifted somewhat the emphasis from cereals to supplementary foods such as fruits and vegetables, milk, eggs, etc. The total foodgrain requirements in 1960-61 at the rate of consumption at the beginning of the Second Plan were estimated to be 70.5 million tonnes. By the end of the Second Plan, the rate of consumption was, however, expected to rise to 18.3 ounces per adult consisting of 15.5 ounces of cereals and 2.8 ounces of pulses and the total foodgrain requirements to 75 million tonnes. The upward trend of foodgrain prices at the beginning of 1956, however, gave rise to serious doubts regarding the adequacy of the Second Plan target. A larger increase in the production of foodgrains was felt necessary to meet the rising domestic demand and thus provide an adequate safeguard against the possibility of inflation. As a result, the Second Plan target of additional foodgrains production was revised upwards to 15.75 million tonnes from the original target of 10.2 million tonnes.

In the Second Plan period as a whole, foodgrains production increased by 15.17 million tonnes to 82.02 million tonnes in 1960-61 against the target of 81.8 million tonnes. The production of rice at 34.6 million tonnes registered significant progress and exceeded the Plan target of 32.5 million tonnes. But there was a shortfall in the production of wheat and other cereals. However, in the case of pulses, the target of production was realised.

One of the main aims of the Third Five-Year Plan was to achieve self-sufficiency in respect of foodgrains. The target of foodgrains production was therefore initially placed at 101.6 (100) million tonnes in 1965-66.[13] This was subsequently revised downward to 92 million tonnes. During the Third Plan, however, results fell short of aims. Although a great deal was done to create potential for higher production, successive years of bad weather conditions as well as shortfalls in individual programmes

13 The Third Plan envisaged an increase of 6.9 per cent in area under foodgrains resulting in an additional output of 3 million tonnes. The balance of 21.4 million tonnes of the original target was to be achieved by an increase in the average yield per acre.

adversely affected production. Foodgrains production registered a nominal advance in 1961-62 but declined in 1962-63 and 1963-64 to levels lower than that at the end of the Second Plan. It however touched a new record of 89 million tonnes in 1964-65 as compared to the previous highest level attained in 1961-62. The last year of the Third Plan coincided with one of the worst droughts and foodgrains production slumped down to a level of 72.03 million tonnes. The decline in foodgrains production was 19 per cent over the previous year and 21 per cent as compared to the revised target set in the Third Plan. The shortfall in production was more pronounced in the case of rice, wheat and pulses.

Due to the prevalence of drought conditions for the second year in succession, foodgrains production in 1966-67 could register only a small increase of 3 million tonnes or 4.2 per cent as compared with 1965-66 and was estimated at 75 million tonnes. Production was higher in the case of every cereal except rice which showed a marginal decline. Production of pulses also declined by 9 per cent as compared with 1965-66. Owing to well-distributed rainfall and weather conditions, production of foodgrains during 1967-68 has been estimated to reach 95.6 million tonnes — more than 6 million tonnes above the record level achieved in 1964-65. For the Fourth Five-Year Plan (1968-69 to 1973-74), the target proposed is 134 million tonnes.

Imports

During the decade 1951-61, imports of cereals averaged 3 million tonnes per year. Table VII indicates that they varied from 1.0 to 11 per cent of domestic cereal production, the variation being related to the domestic supply position. During the triennial 1954 to 1956 when the crops were moderately good, but the foodgrain prices declined sharply, imports were only marginal, being less than 2 per cent of the domestic production. In spite of substantial increase in the total output of foodgrains during the Second Plan, imports of cereals continued to be large mainly because of a rapid increase in demand due to accelerated population growth and increase in income of the people. Imports of wheat, which form a major portion of foodgrain imports, were arranged under P. L. 480 from the United States, under the Colombo Plan

assistance and on deferred payment basis. A small quantity of wheat was imported on commercial basis to avoid disturbance to the normal pattern of world trade. India entered into an agreement with the United States in May, 1960 providing for the import of 16 million metric tons of wheat and 1 million metric tons of rice under P. L. 480 over a period of four years. Out of the total imports of foodgrains under this agreement, 4 million metric tons of wheat and 1 million metric tons of rice were intended for building up reserves. As a result of stagnation in foodgrains production during the Third Plan period, imports of foodgrains were stepped up, ranging from 5 to 17 per cent of the domestic cereal production. During the year 1966, in which supply from domestic production has gone down by as much as 17 million tonnes on account of unprecedented drought, the aggregate foodgrains imported reached the all time record of 10.4 million tonnes. During 1967, the total quantity of foodgrains imported into India amounted to 8.67 million tonnes; and it is proposed to import 7.5 million tonnes in 1968.

Both domestic production and imports have contributed to the increase in the total supply of foodgrains. During the decade 1951-61, the total net availability of foodgrains improved from 51.88 million tonnes to 75.42 million tonnes, the per capita net availability per day having risen from 13.6 ounces to 16.5 ounces. During the Third Plan period, the net availability of foodgrains increased from 76.36 million tonnes in 1962 to 84.25 million tonnes in 1965 but it sharply declined to 73.15 million tonnes at the end of the Third Plan. As a result of this decline, the per capita net availability of foodgrains per day declined from 16.3 ounces to 14.2 ounces during the same period which was much below the anticipated level of 17.5 ounces.[14]

With a view to diversifying the pattern of food consumption and promoting balanced nutrition, the Third Plan included programmes for the increased production of subsidiary food items such as vegetables, fruits, etc. The Plan also included development schemes for the conservation and effective utilisation of

14 Third Five-Year Plan, Planning Commission, Government of India (1961), p. 63.

TABLE VII

AVAILABILITY OF FOODGRAINS IN INDIA

(in million tonnes)

Year	Total cereal Pro-tion	Imports of wheat	Total cereal Imports	Column (4) as per cent of column (2)	Net availability of food-grains	Per capita net availability of foodgrains (ounces)
1	2	3	4	5	6	7
1951	45.74	2.97	4.81	10.5	52.27	13.9
1952	46.40	2.46	3.93	8.5	51.88	13.6
1953	51.85	1.61	2.04	3.9	56.48	14.5
1954	61.08	0.19	0.84	1.4	63.79	16.1
1955	58.97	0.43	0.71	1.2	63.05	15.6
1956	55.80	1.10	1.44	2.6	62.55	15.2
1957	58.30	2.90	3.65	6.3	66.06	15.7
1958	54.75	2.72	3.22	5.9	61.68	14.4
1959	63.99	3.55	3.87	6.0	72.22	16.5
1960	64.88	4.39	5.14	7.9	70.83	15.8
1961	69.31	3.09	3.50	5.0	75.42	16.5
1962	70.95	3.25	3.64	5.1	76.36	16.3
1963	68.62	4.07	4.56	6.6	74.69	15.5
1964	70.57	5.62	6.27	8.9	78.05	15.9
1965	76.56	6.58	7.46	9.7	84.25	16.7
1966	62.23	7.78	10.36	16.6	73.15	14.2
1967	66.13	6.35	8.67	13.1	74.57	14.1

Sources: Bulletin on Food Statistics, February, 1968, *op. cit.;* Economic Survey, 1966-67, Ministry of Finance, Government of India (1967); and Report 1967-68, Ministry of Food, Agriculture, Community Development and Co-operation (Department of Food), Government of India (1968).

perishable foodstuffs and development of protein-rich foods. The New Strategy for agricultural development initiated in 1966-67 seeks to create a congenial environment for a significant improvement in agricultural production capability. The new approach also encourages the promotion of subsidiary food like potatoes and other tubers in order to increase quickly and substantially the calorific content of food supply. No less important is the increased production of supplementary foods to mitigate protein deficiency in the diet. With this objective in view, co-ordinated development projects for livestock, poultry, cold storage, processing of poultry products, fisheries and the manufacture and distribution of feeds have been drawn up.

Review of Food Policy

Government's policy regarding food distribution between 1951-57 has undergone a change successively from complete control to complete decontrol and back to partial control. There was first a cautious approach towards relaxation of the irksome features of controls in 1952; ration shops were substituted by fair price shops, the volume of procurement was reduced and inter-State bans on movement of coarse grains were removed by the end of 1953. Imports were cut down substantially. Government also decided to permit private trade to participate in a limited way in the import and export trade in foodgrains. After the record production of cereals in 1953-54, there was a virtual end of food controls which had been started exactly ten years before. In May, 1954, two wheat zones were constituted — one comprising the States in the North and the other in the West. Movement of wheat between the States in each zone was made free but exports outside the zone remained banned. The area of the West zone was gradually extended to cover the States in the South. In December, 1954, a third wheat zone comprising the States of Uttar Pradesh and Bihar was also formed. Procurement of coarse grains and wheat was completely given up by March, 1954 in those States where it had not been abandoned in 1953. Rice was decontrolled in July, 1954 when statutory rationing of rice was also given up. At the end of 1954, there was no rationing anywhere in the country. The subsidy on imported foodgrains was also withdrawn. Total procurement amounted to only 1.4 million tonnes. With

the fall of prices to low levels, the accent of policy shifted from ceilings to floor prices. As the food situation eased in 1954, Government felt it necessary to maintain a central reserve of 1.5 million tonnes of foodgrains, partly of rice and partly of wheat. There were adequate stocks of wheat in hand. For rice, an agreement was made with Burma in March, 1954 for the import of 0.9 million tonnes. Inter-zonal restrictions on the movement of wheat and its products were removed from March, 1956.

During 1955-56, the food situation in the country took a rapid turn for the worse. Thereafter, foodgrains prices took an upward trend, at first slowly and later somewhat rapidly. Exports of foodgrains were prohibited early in 1956. It was announced in April, 1956 that Government had decided to build up a buffer stock of 2 million tonnes of wheat and rice. Credit control measures were introduced during 1956-57 with a view to discouraging speculative transactions in foodgrains. Sales of rice and wheat from Government stocks were accelerated. Simultaneously, Government also arranged for larger imports of foodgrains. With a view to putting a curb on trade hoarding and maintaining an even flow of market supplies, the Essential Commodities Act was amended in June, 1957 to enable the Government to requisition by notification, stocks of foodgrains at a price calculated with reference to the average market rate prevailing in the concerned locality during the period of three months immediately preceding the date of the notification. Fair price shops were opened. And, lastly, three wheat zones comprising the States of (1) Himachal Pradesh, Punjab and Delhi, (2) Uttar Pradesh, and (3) Rajasthan, erstwhile Bombay State (excluding the City) and Madhya Pradesh, were formed in June, 1957 and a rice zone comprising the States in the South was constituted in July, 1957. Cordons around the Bombay City and Calcutta were however continued and the entire requirements of these cities were met by the Union Government. In addition to these, Orissa was cordoned off for rice and Uttar Pradesh for wheat.

The idea behind dividing the country into different zones was to match deficit States with surplus States so that they can be converted into self-sufficient units. Movement of cereals

within the zone is permitted[15] but movement outside the zone is undertaken only on Government account. This policy, besides achieving regional self-sufficiency, is expected to conserve supplies for local use, facilitate procurement of foodgrains by the State and check speculative rise in prices and profiteering. This would also minimise the demand on government supplies and would eliminate cross movements of particular cereals.

Commenting on the zonal system as it was prevalent during 1957 the Foodgrains Enquiry Committee observed, "......these zones by themselves play a useful role especially during the transition period between free trade and physical controls. But, if zones are introduced in a haphazard manner and without proper attention being paid to the effect that they are likely to produce on the consumers outside the zones, there may be considerable dislocation and distress in the initial period...... If the zones are changed too often, that upsets the normal trade pattern and creates considerable difficulties all-round...... Prior arrangements for adequate supplies for deficit areas outside the zones should be invariably made before any scheme for zoning is implemented. Once a zone is formed it should be maintained on a relatively long-term basis so that the trade patterns are not frequently disturbed."[16]

The difficult food situation that arose in the wake of shortfalls in production and rising pressure on foodgrains prices since 1960-61 necessitated introduction of several measures to meet the emergent situation.[17] The main trend of policy has been towards greater regulation and controls on the sale, purchase and movement of foodgrains. During the period 1960-61 to 1963-64, controls existed but were not many. All foodgrains, except rice, were allowed to move freely throughout the country and there were no restrictions on their prices, purchases and sales. Imports of foodgrains during this period were, however, stepped up

15 In practice, however, restrictions have been imposed in some cases on movement of commodity within the zone too.

16 Report of the Foodgrains Enquiry Committee, Ministry of Food and Agriculture (Departmen of Food), Government of India (1957), p. 99.

17 Report of the Foodgrains Policy Committee, Ministry of Food, Agriculture, Community Development and Co-operation (Department of Food), Government of India (1966), pp. 8-15.

principally under the P.L. 480 programme. Government also maintained a system of public distribution in the form of fair price shops through which foodgrains were distributed annually. With a view to promoting regional self-sufficiency, avoiding cross movement and reducing speculative activity in the purchase and sale of rice and wheat, four large rice zones and eight wheat zones comprising contiguous deficit and surplus States were constituted during the period 1960-61 to 1963-64. There were no restrictions on movement, purchase and sale of rice and wheat within each zone, but no movement of rice and wheat by private trade was allowed outside the zone. By the end of the 1963-64 season, the large rice zones had for all practical purposes disintegrated with the exception of the Northern Rice Zone comprising Punjab, Himachal Pradesh and Delhi. During the 1964-65 season, Government decided to allow each State to continue as a separate rice zone, except that the Northern Rice Zone was to continue to function.

The main features of food policies during 1964-68 were intensification of procurement, larger distribution through the system of public distribution, *i.e.*, fair price and ration shops and restrictions on inter-State movement of foodgrains. Procurement is considered to be a crucial element of food policy in that Government seeks to acquire command over the requisite supply for gaining a position of strength in the foodgrains market. The pattern of procurement has varied from State to State and time to time and involved acreage levy on producers, levy on millers and dealers, open market purchases and monopoly procurement at controlled prices. As may be noted from Table VIII, the average annual foodgrains procurement over the decade ending 1961 amounted to 1.16 million tonnes from the average production of 68.6 million tonnes — which would amount to less than 1.7 per cent of annual production. As a result of the intensification of procurement efforts, mostly confined to paddy and rice, the total procurement of foodgrains increased from 1.43 million tonnes in 1963-64 to 4.47 million tonnes in 1966-67. Whereas in the past procurement was confined mainly to surplus States, despite conditions of drought in 1965-66, procurement was extended to surplus pockets in deficit areas as well as surplus producers all over the country. Procurement operations were

undertaken by all the States, except Mysore where procurement was given up in early 1966. Further in addition to rice and wheat, coarse grains and grams were procured by some State Governments. Originally the target of procurement in 1967-68

TABLE VIII

FOODGRAINS PRODUCTION AND PROCUREMENT

(*in million tonnes*)

Year	Production	Procurement	Per cent of column (3) to column (2)
(1)	(2)	(3)	(4)
1951-52	52.02	3.48	6.68
1952-53	59.24	2.09	3.52
1953-54	69.82	1.43	2.04
1954-55	68.07	0.13	0.19
1955-56	66.85	0.04	0.06
1956-57	69.85	0.29	0.41
1957-58	64.31	0.53	0.82
1958-59	77.14	1.80	2.33
1959-60	76.67	1.27	1.65
1960-61	82.02	0.54	0.66
Total (Years 1951-52 to 1960-61)	685.99	11.60	1.69
1961-62	82.71	0.48	0.58
1962-63	80.15	0.75	0.95
1963-64	80.64	1.43	1.78
1964-65	89.00	4.03	4.53
1965-66	72.03	4.01	5.55
1966-67	75.05	4.47	5.95
1967-68*	95.60	6.50	6.80

* Provisional.

Source: Bulletins on Food Statistics, Ministry of Food and Agriculture, Government of India.

was placed at 7 million tonnes from the *kharif* crop and 1 million tonnes from the *rabi*. The actual procurement is likely to be 4 million tonnes from the *kharif* and 2.5 million tonnes from the *rabi*.

To eliminate gradually the dependence on imports is stated to be the major objective of food policy. Despite the record level of foodgrains production which was expected, import requirements during 1967-68 are placed at about 7.5 million tonnes. In December, 1967, an agreement was signed with the U.S. Government under P.L. 480 for the import of 3.5 million tonnes of foodgrains.

Statutory rationing was introduced in the first instance in Greater Calcutta, Madras, Coimbatore and Delhi in 1965 and extended in 1966 to ten more cities and industrial areas. The entire State of Kerala and the Union Territories of Goa, Daman and Diu continued to be under the statutory distribution system. In other areas, distribution of foodgrains through fair price shops was also streamlined by the introduction of family identity card system. The number of fair price and ration shops increased from 50,910 in 1960 to 145 thousand at the end of December, 1967. The total population covered under statutory rationing was about 31 million and that under informal rationing 245 million, making a total of 276 million.[18] The quantity of foodgrains issued through the public distribution system increased from an average of about 4.6 million tonnes during the period 1960 to 1963 to 10 million tonnes in 1965 and further to nearly 14.1 million tonnes in 1966; it amounted to 13.2 million tonnes in 1967.[19] With the improvement in supplies consequent on good production statutory rationing was discontinued in Siliguri and Kanpur from January, 1968. In Delhi, movement of rice and wheat from the rural areas and their sales in the open market in the rationed area has been permitted from February, 1968.

Establishment of adequate buffer stocks of foodgrains with a view to even out fluctuations in availability and consequently in prices from one season to another continues, however, to be an important plank of policy. But owing to continuing shortages, Government's efforts in this direction have not met with success. The precipitous fall in foodgrains production during the two years 1965-67 has led to the liquidation of even the limited reserves

18 Report 1967-68, Ministry of Food, Agriculture, Community Development and Co-operation (Department of Food), Government of India, *op. cit.*, p. 16.

19 Bulletin on Food Statistics, February, 1968, *op. cit.*, p. 37.

built up from imports. In view of the bright prospects of foodgrains production during 1967-68, it is proposed to build a buffer stock of 3 million tonnes of foodgrains by the end of October, 1968.

The policy of fixing minimum support prices for agricultural commodities has also been continued from June, 1957. These prices are intended to remove price uncertainties on the part of producers and to serve as a long-term guarantee to them that in the event of a sharp fall in prices consequent on excessive increase in production, their income will not be allowed to fall unduly. The minimum support prices for paddy, jowar, bajra, maize and gram that had been fixed for 1964-65 were, with marginal changes, also adopted for 1965-66 and 1966-67. The minimum support prices for these foodgrain crops and for cotton, jute and sugarcane are raised for the 1967-68 season on the basis of the recommendations of the Agricultural Prices Commission, set up in January, 1965. In addition, procurement prices which are higher than minimum prices, were fixed for *kharif* and *rabi* foodgrains for 1967-68. The prices were fixed at higher levels than those of the previous season in order to provide incentive to the producers.

With a view to examining the zonal arrangements in regard to the movement of foodgrains and the systems of procurement and distribution in the country, and to recommend modifications, if any, in the existing arrangements for achieving an equitable distribution of foodgrains at reasonable prices, the Government of India appointed a Foodgrains Policy Committee in March, 1966. An assessment of the working of food policy by the Foodgrains Policy Committee reveals that "It would have been extremely difficult, but for the policies of public procurement and public distribution adopted, to maintain supplies, on the whole without undue dislocation, to large sections of the population and large areas of the country...... The policy of larger distribution through the retail channels under Government control has also reduced the disparity in availability of foodgrains as between different States...... This reduction in disparity, even if only marginal, has been possible because of the stepping up of distribution in deficit States such as Gujarat, Maharashtra,

Kerala and West Bengal."[20] Analysing all the factors into consideration, *viz.*, rising demand, decreasing imports and a not-too-spectacular increase in production, the Committee believes that the food situation in the next five years will continue to be difficult, and in a bad year critical.[21] This indicates the need for adoption of a cautious approach. The Committee has further given a note of warning that the situation of marginal shortage might continue even after five years especially as the factors which tend to increase the demand for foodgrains will continue to operate. It follows that the available food supplies will have to be managed in accordance with a national plan so as to minimise distress and avoid excessive price rises. The Committee has therefore come to the conclusion that food controls are inescapable for a number of years to come, and that long-term food planning coupled with prudent management of resources with active role of Central and State Governments is essential.[22]

In the context of foodgrains shortage, the Committee suggested that the main objectives of the food policy should be (*a*) to achieve self-reliance; (*b*) to ensure equitable distribution; and (*c*) to keep prices stable and at reasonable levels.[23] The recommendations of the Committee are summed up in one phrase: "national management of food." As the national management of food implies a national plan of supply and distribution, the Committee advocated the formulation of a National Food Budget in accordance with the basic principle of sharing the national availability in a fair and equitable manner. The Committee recommended the adoption of an integrated food policy. The essential features of this policy are (i) procurement of foodgrains to ensure necessary supplies, (ii) control over inter-State movement of foodgrains to facilitate and keep prices at a reasonable level, (iii) a system of public distribution to ensure equitable sharing, and (iv) the building up of a buffer stock to provide against difficult years. The Committee suggested that procurement should be undertaken both by the surplus and deficit States. A uniform system of procurement for the whole

20 Report of the Foodgrains Policy Committee (1966), *op. cit.*, p. 15.
21 *ibid.*, p. 22.
22 *ibid.*, p. 5.
23 *ibid.*, pp. 23-25, 38-39 and 57.

country is not feasible. However, each State should introduce a minimum graded levy on producers in respect of all the major foodgrains. This basic levy should be supplemented by other methods of procurement, *e.g.*, levy on the millers and the traders or pre-emptive purchases, etc. It recommended that the State control over inter-State trade in foodgrains should be continued and that the Food Corporation of India should be entrusted with the function of carrying out all the inter-State transfers of food.[24] It recommended that a National Food Council should be set up for the purpose of "formulating, reviewing, revising and implementing the National Food Budget."[25] With regard to foodgrains prices, the Committee recommended a policy of guaranteed minimum support prices to be announced well in advance of the sowing season. The procurement prices should be higher than the support prices. The Committee did not favour fixing of the maximum prices which are difficult to enforce and which keep the stocks away from the open market. The Committee did not, however, find any justification for continuation of a subsidy on foodgrains for consumers in general.[26]

The recommendations of the Committee were considered at a Conference of Chief Ministers held in November, 1966 and the principal recommendations were broadly endorsed. It was agreed that the restrictions on inter-State movement of foodgrains on private trade account should be continued. It was decided to draw up a National Food Budget and intensify procurement. It was also accepted that the Food Corporation of India should gradually become the principal agent for procurement and distribution, specially involving inter-State movement. It was also decided that the subsidy being borne by the Central Government in the distribution of foodgrains should be withdrawn gradually. Apart from zonal arrangements, other important developments relating to food situation were reviewed at another Conference of Chief Ministers held in April, 1967. A tentative National Food Budget prepared in conformity with the recommendations of the Foodgrains Policy Committee was also considered at this Conference of Chief Ministers. In view of the fact that the Budget had

24 *ibid.*, pp. 45-46, 50 and 56.

25 *ibid.*, p. 28.

26 *ibid.*, pp. 54-56.

some limitations on account of the imperfect data available relating to production, consumption, etc., it was considered that in order to meet the difficult situation during the year, it would be necessary to proceed on *ad hoc* basis but efforts should, however, be made to perfect the system of collection of data so that a proper and more accurate food budget could be prepared later on.

As regards zonal arrangements, the bigger wheat and gram zones comprising the States of Punjab, Uttar Pradesh and Haryana and the Union Territories of Himachal Pradesh, Chandigarh and Delhi (excluding areas under statutory rationing) were split up and instead each State/Union Territory has been formed into an independent zone except that Delhi has been added to Haryana for gram. The States of Punjab and Haryana and the Union Territories of Chandigarh and Himachal Pradesh have also been formed into single State zones for rice, paddy and maize. Movement of wheat, rice, gram and maize from Punjab and Haryana to Chandigarh has, however, been kept free. The zonal arrangements were again reviewed at the Chief Ministers' Conference held in September, 1967. Though it was felt that in the long run restoration of free inter-State movement of foodgrains would be desirable, the consensus was in favour of continuing the zonal restrictions in 1967-68. The continuance of these restrictions has been considered necessary in view of the paramount importance of maximising procurement for meeting public distribution needs within the States, supply of foodgrains to deficit States and also for building up a buffer stock.

To sum up, the main planks of food policy as emerging from the preceding discussion are (1) maintenance of a public distribution system through extension of rationing and fair price shops; (2) meeting the food requirements, especially of the vulnerable sections of the population at reasonable prices through (*a*) intensification of internal procurement and (*b*) imports; (3) building up of a buffer stock of 3 million tonnes of foodgrains and (4) restrictions on inter-State movement of foodgrains on private trade and State control over inter-State trade in foodgrains for (*a*) ensuring equitable distribution between different States, (*b*) keeping prices at reasonable levels for both the consumer and

the producer and (*c*) ensuring maximum procurement. In view of the marginal surpluses and occasional shortages, to evolve a food policy which would meet the demands of a public distribution system has been found to be a difficult task. The administrative machinery to implement the national food policy will have to be so designed that it can deal with all the situations of shortage, normal and abnormal, during the relatively long period that must elapse before the attainment of self-sufficiency. In view of the complex and intricate organizational problems involved in the handling, purchase, storage, sale, movement and financing of foodgrains, a public agency like the Food Corporation of India has been assigned an increasingly important role in the implementation of the food policy.

The Food Corporation of India

The Food Corporation of India was established in January, 1965 with its head office at Madras.[27] The primary duty of the Corporation is to undertake the purchase, storage, movement, transport, distribution and sale of foodgrains and other foodstuffs. The Corporation may also, with the previous approval of the Central Government, (*a*) promote the production of foodgrains and other foodstuffs and (*b*) set up, or assist in the setting up of, rice mills, flour mills and other undertakings for the processing of foodgrains and other foodstuffs. It works as a statutory organisation, wholly owned by the Central Government. The Central Government has been authorised to fix the original capital of the Corporation, and increase it from time to time, subject to a ceiling of Rs. 100 crores. The Corporation functions as the agent of the State Governments and also as the agent of the Central Government in regard to the tasks entrusted to it by them. During the short period of its existence, it has developed its operations in varying degrees in 14 out of 17 States of India, in all of which it has established its regional offices. The activities of the Corporation have diversified so as to cover rice, wheat, coarse grains, millets, pulses, groundnut seed and oil, wheat products and blended flours and, on an experimental basis, spices also.

27 The Food Corporation of India—Review of Activities Since Inception, Food Corporation of India (1967 and 1968 mimeo.).

The Corporation is engaged in purchasing, transporting, storing and selling of foodgrains. The total quantity of agricultural produce (rice, wheat, millets, pulses and groundnut oil) purchased by the Corporation increased from 4.03 lakh tonnes in the crop year 1964-65 (ending 31st October, 1965) valued at Rs. 72 crores to 18.7 lakh tonnes in the crop year 1966-67 valued at Rs. 311 crores and further to 44.5 lakh tonnes in the crop year 1967-68 (up to 31st July, 1968) valued at Rs. 534.81 crores. Depending upon the situation prevailing in each State, the Corporation has had to adopt several methods for effecting purchases. Wherever the Corporation has to function as an agent of a State for the collection of levy, the purchases are effected according to the levy order. In some States, the levy is on growers and in others, on millers or crushers. Where the levy is on the grower, the Corporation uses collection agents who include primary co-operatives, district or apex marketing societies. Where the levy is on the millers or crushers, the collection is made directly from them. In certain cases, the Corporation opened its own temporary collection centres and collected foodgrains directly from the growers. Where regulated markets are functioning as an effective channel for sale by growers, as in Punjab, Haryana and Rajasthan, it has been buying regularly in the *mandis* from those who represent the growers. In such cases, it makes use of commission agents, and wherever possible, avails of the right of pre-emption conferred on it by the State. As most of the cereals are subject to price controls, the purchase price is determined for the Corporation in all such cases by the appropriate Government. In those cases where there has been no price control, as in the case of gram, gram dal, barley, etc., the Corporation has bought at prices established either through negotiations or on tenders, in either case their decision being supported by market intelligence about arrivals and price trends.

In several States, the Corporation is entrusted with the responsibility of selling stocks to the Collectors or other authorities indicated by the Government. In a few States, the Corporation sells to the State Governments and despatches stocks to the Collectors or other authorities indicated by the Government. In some States, the Corporation sells part of the stock to public

authorities and part to nominated dealers and fair price shops. Wherever the Corporation is entrusted with the task of selling directly to the trade, under the general control of a State Government, the sale price is immediately recovered by the Corporation. In such cases, the State is freed from the responsibility of financing the purchase of stocks and keeping account of all transactions of purchase and sale, while retaining full control over the marketing operations. This system obtains in Kerala, Andhra, West Bengal and Assam with regard to cereals and pulses, and in Gujarat with regard to groundnut oil. In the States of Madras, Mysore, Rajasthan, Madhya Pradesh and Uttar Pradesh, sales of some of the items are made directly to the trade, and others to civil authorities.

In the case of all foodgrains which are subject to price control, the sale price, and consequently the amount recoverable by the Corporation as the part thereof for covering its expenses are specifically agreed to with each State Government. In cases where there is no price control and the Corporation is called upon to buy for a large number of consuming States, the Corporation endeavours to fix a pool price for a given period of time for all States. In view of the rapid fluctuations in prices of such articles and the absence of any buffer stock in hand, it has not been possible for the Corporation to achieve any long term stability in prices of such items. The major effort of the Corporation in such cases had been to meet the urgent need of various States and of the Army Purchase Organization for whom it has been buying. Its total sales turn-over was Rs. 130.67 crores during the financial year 1965-66 and is estimated at Rs. 251.19 crores during 1966-67 and Rs. 375 crores during 1967-68. It earned a net profit of Rs. 22.57 lakhs and Rs. 304.73 lakhs during 1965-66 and 1966-67 respectively.

The share of the Corporation in the distribution of imported foodgrains expanded with the establishment of its activities in more States and with the transfer to it of Central Government depots in these States. The total quantum of imported foodgrains handled by it increased from 12.8 lakh tonnes in 1965-66 to 23.5 lakh tonnes in 1966-67; it was however 22.4 lakh tonnes in 1967-68 (up to 31st July, 1968).

The Corporation has proposed to enter the field of food processing, starting with rice milling and the sponsoring of the manufacture of blended flours. It has taken over the manufacture and distribution of wheat products in the four southern States of Madras, Mysore, Kerala and Andhra Pradesh from April, 1965 and extended the arrangements to Orissa and Rajasthan from January, 1966 and to the Union Territory of Delhi from July, 1966. During 1966-67 the Corporation attempted a few pilot projects for popularising high-yielding varieties of paddy involving the supply of inputs to farmers against their promised delivery of grain after harvest in the States of Andhra Pradesh, Madras and Mysore. It has set up 30 mechanical paddy drying centres in the Thanjavur district in Madras with a view to giving an impetus to the adoption of progressive farming techniques by farmers in the district.

FUTURE PROSPECTS

The prospects of making good the deficiencies in the quantity and quality of Indian diet within a foreseeable future would thus depend on the possible increase in the production of different types of necessary food and the future course of the increase in the population. A slow improvement is evident from the review of the last decade when the daily per capita supply of foodgrains increased from 13.9 ounces in 1951 to 16.5 ounces in 1961. As a result of this and improvement in the availability of some other food items, calories per capita per day rose by 20.8 per cent and the average daily consumption of proteins by 21.6 per cent during the same period.[28] This slow favourable trend could be accelerated by stimulating production especially of the protective foods. In addition, it is imperative to reduce the growth of population by popularising family planning practices more particularly in rural areas.

Between 1951 and 1961, India's population increased at an annual compound rate of 1.8 per cent to 439.2 million,. The growth rate was estimated to be 2.4 per cent per annum during 1961-65 and is expected to rise still further to 2.5 per cent per

28 E. S. Nasser, "An Approach to a Food and Nutrition Programme for India," *Agricultural Situation in India*, Vol. XVII, No. 5, August (Annual Number), 1962.

annum during 1966-70. India's population in mid-year 1968 has been estimated at 524 million. The increased rate of population growth observed in the last 17 years was mainly a result of a decline in the death rate due to better control of public health and sanitary conditions during the Plan periods. Measures to improve public health envisaged in the Third and Fourth Plans are expected to bring down the death rate still further, but the fall would not be as large as in the last decade because the major schemes like malaria control had already achieved a substantial success in the last decade. As a result of the spread of family planning campaign, the birth rate may also show a decline, but not perceptibly in the immediate future. Indeed the possibilities of acceleration in the rate of population growth have still not been exhausted. Hence, India's main hope of improving the level of nutrition of her people lies in realising the agricultural potential as quickly as possible.

The Planning Commission in their population projections given in the Third Five-Year Plan proceeded on the assumption that the fertility rates in India would decline only after 1971 and estimated that the total population of India would reach a figure of 625 million by 1976. Sukhatme in his paper[29] has pointed out that with such a rapid increase in population, food supplies needed by 1981 would have to be two-thirds higher merely to sustain the population at the present level of diet. Therefore much larger food supplies would be needed if, in addition to providing for the growth of population, allowance is to be made for improving the present standards of nutrition. His analysis shows that if, in addition to providing for the increase in population, India is also to wipe out the current deficit by 1971, then it would have to increase the available supplies by about 44 per cent in cereals, 115 per cent in pulses, 130 per cent

29 P. V. Sukhatme, "The Food and Nutrition Situation in India (Part II)," *Indian Journal of Agricultural Economics*, Vol. XVII, No. 3, July-September, 1962, pp 1-34. See also the study on "A Plan for Improvement of Nutrition of India's Population," V. G. Panse, V. N. Amble and T. P. Abraham, *Indian Journal of Agricultural Economics*, Vol. XIX, No. 2, April-June, 1964, pp. 13-40. It sets out the specific manner in which the production of cereals, pulses and milk can be stepped up to meet the requirements and the measures necessary to achieve this aim at the er l of Third, Fourth and Fifth Five-Year Plan periods (1965-76).

in fruits and vegetables and 100 per cent in animal products. This implies that the total food supplies would need to be increased by about 4.65 per cent per annum as against a rise of little over 3 per cent recorded in the last decade. The present rate of increase in food supplies is inadequate to wipe out the current deficit before 1981 and therefore much bigger efforts would be needed if the deficit is to be met by 1971. Sukhatme estimates that the continuation of the increase in the total food supplies at the rate of 4.65 per cent per annum after 1971 would help to reach by 1976 the moderate level target, *i.e.*, a reasonably good level of nutrition to which people can rightfully aspire in the course of 15 years or so.

The task of raising the additional food needed on such a large scale is enormous though there exists considerable scope for increasing the production of food within the country.[30] Several of the reliable estimates show that the yield per acre in India is about a quarter to a third of the current yield per acre in certain other countries. Further, out of a total geographical area of about 326.81 million hectares, the net area sown totalled only 138 million hectares in 1964-65. There were about 20.3 million hectares of fallow land and another 36.4 million hectares of uncultivated land. Of these, about 20 million hectares can be brought under plough which should raise foodgrains production by about 14 to 15 million tonnes. Further, out of the net area sown, some 20 million hectares were double cropped in 1964-65.[31] With the extension of irrigation facilities to a gross area of 45.3 million hectares as proposed by the Planning Commission as compared to about 31.2 million hectares at present, it should be possible to increase the area under double cropping by about 28.3 million hectares.[32]

The extent of deficiency is, however, more serious with regard to protective foods, the supply of which is very small at

30 *Vide* The Food Problem of Developing Countries, Organisation for Economic Co-operation and Development (1968), Chapters IV and V.

31 Indian Agriculture in Brief, Eighth Edition, Directorate of Economics and Statistics, Ministry of Food, Agriculture, Community Development and Co-operation, Government of India (1967), pp. 36-39 and 45.

32 Fourth Five-Year Plan — A Draft Outline, Planning Commission, Government of India (1966), p. 215.

present. In addition to the measures of increasing overall food production in the country, it is essential to take special measures for increasing the production of certain groups of protective foods. Proteins being an important element requiring immediate attention, steps to increase the production of protein-rich foods deserve priority. Recent studies have shown that pulses in combination with cereals and certain other vegetable foods provide a balance of amino acids comparable to that of many animal proteins. Therefore, steps should be taken to increase the production of pulses and this would be best practicable interim approach to the problem of protein deficiency until such time that animal food protein which is more complete with reference to its amino acid composition, can be increased. Steps also should be taken to increase the domestic production of fruits and vegetables.

The most difficult problem is that of increasing milk output. The problem is however an urgent one because milk is the only acceptable source of good quality protein in the country, especially for children with its additional value as protective food to supply minerals and vitamins and also animal fat which is very inadequate in the Indian diet. India has about one-fifth of the world's cattle population, though most of it is undernourished. Efforts should therefore be made to increase milk production by increasing the resources of feed and fodder, reducing the surplus number of animals and improving the breed.

A large deficit has also to be made up in the production of animal food and eggs. The experience in many countries shows that by good feeding and management and proper disease control, production of eggs in the country can be increased appreciably. India has a long coastline and abundant inland water resources, but the total fish output is small because these resources still remain largely unexploited. If facilities for improved haulage, quick and refrigerated transport and cold storage are provided, a good part of the deficit of good quality protein in the Indian diet could be met in a short time.

The food production drive would have to be supplemented by measures to improve storage, preservation and transport of

specially perishable goods and by provision for instruction of the people regarding the nutritive value of different kinds of foods, the methods of cooking and the relation between food and health. There also exists considerable scope for exploitation of a large number of hitherto neglected sources of vegetable protein foods. It is now quite feasible to recover proteins of good biological value from the plant kingdom.

CHAPTER IV

AGRICULTURAL PRODUCTION

In any review of agriculture's contribution to economic development, the pride of place must belong to the growth in agricultural product.[1] This apparently simple discussion runs into many unexpected difficulties, the moment an attempt is made to give it a statistical dimension. During the last decade (1951-60), especially in its first half, the statistical coverage of cropped area and production was continuously expanding; hence, year to year absolute figures of production do not reflect the real increase in production. Besides, during this period, there was a gradual change in the method of estimating crop yields from the traditional eye estimates to the one based on scientific crop-cutting tests. The year of change varied not only region by region, but also by crop to crop. The Ministry of Food and Agriculture has, however, worked out an index number series of production, eliminating as far as possible the element of non-comparability arising out of the changes in coverage and estimation methods. Table I gives the necessary information.

TRENDS IN AGRICULTURAL PRODUCTION

Table I brings out the marked year to year fluctuation in agricultural production. It will be seen from the table that despite annual fluctuations, agriculture in India has made considerable progress since the initiation of the First Five-Year Plan (1951-52). At the end of the Second Plan (1960-61), the index of overall agricultural production stood at 142.2, the increase being 42 per cent over 1949-50. During the same period, the index of foodgrains production increased by 37 per cent while that of non-foodgrains by nearly 53 per cent. The first two years of the Third Plan suffered from unevenly distributed rainfall over large areas and floods and droughts. Despite these

1 *Vide* "Economic Development and the Role of the Agricultural Sector in India," M. L. Dantwala, Paper submitted to the ECAFE in 1964.

TABLE I

INDEX NUMBERS OF AGRICULTURAL PRODUCTION IN INDIA: 1950-67

(*Agricultural year* 1949-50 = 100)

Agricultural year	Rice	Wheat	Cereals	Pulses	Food-grains	Oil-seeds	Cotton	Jute	Sugar-cane (*gur*)	Non-food-grains	All commo-dities
1950-51	87.9	101.1	90.5	91.7	90.5	98.5	110.7	106.3	113.7	105.9	95.6
1951-52	90.1	93.9	91.2	90.3	91.1	97.4	119.2	151.4	122.8	110.5	97.6
1952-53	96.8	112.7	101.4	98.8	101.1	91.9	121.0	148.6	101.6	103.8	102.0
1953-54	118.6	120.0	120.1	112.0	119.1	103.7	151.8	100.0	89.5	104.7	114.3
1954-55	105.8	135.4	114.5	118.5	115.0	122.6	163.6	94.8	115.9	120.9	117.0
1955-56	114.2	131.3	114.9	118.4	115.3	108.6	153.9	135.8	119.8	119.9	116.8
1956-57	120.4	140.7	120.5	122.9	120.8	120.3	181.2	138.7	137.2	131.5	124.3
1957-58	105.7	118.5	110.1	103.0	109.2	119.0	178.8	128.8	138.1	129.5	115.9
1958-59	127.6	147.4	129.8	136.0	130.6	136.8	175.8	158.7	141.5	139.4	133.5
1959-60	126.2	152.8	128.9	126.3	127.9	125.3	132.4	137.4	153.3	135.0	130.3
1960-61	137.7	162.8	138.3	120.8	137.1	134.0	202.1	125.3	183.9	152.6	142.2
1961-62	142.4	178.8	143.1	129.0	140.3	140.0	174.9	192.7	173.5	153.9	144.8
1962-63	132.6	159.6	135.9	121.5	133.6	142.6	199.8	165.0	152.5	151.6	139.6
1963-64	147.0	145.9	141.4	117.9	136.5	134.5	208.6		172.6	156.5	143.1
1964-65*	155.1	182.1	153.7	102.9	150.2		217.6§	182.4	200.2§	175.4	158.5
1965-66*	121.8	154.5	124.2	98.4	120.9	125.4	183.0	135.5	201.3	156.4	132.7
1966-67†	120.9	170.8	129.9	88.8	124.6	127.3	189.5	162.1	158.0	148.2	132.4

* Partially revised estimates. † Final estimates. § Revised.

Source: Ministry of Food, Agriculture, Community Development and Co-operation, Government of India. Reproduced from *Reserve Bank of India Bulletin*, Vol. XXII, No. 3, March, 1968, p. 339.

N.B.: Coverage of the index numbers of agricultural production is limited to 28 principal crops.

adverse weather conditions, the index number of agricultural production at the level of 144.8 in the first year of the Third Plan (1961-62) was at a much higher level than the average level of 129.2 and the highest level of 142.2 achieved during the Second Plan period. As compared with the previous year, the index of agricultural production during 1962-63 declined by 3.6 per cent to a level of 139.6 and the decline in production was more marked in the foodgrains group (4.8 per cent) than in non-foodgrains (1.5 per cent). Rice, wheat, jute and sugarcane were the major crops which received a set-back in production and the fall in the production of each of these crops was about 6.9 per cent, 10.7 per cent, 14.4 per cent and 12.1 per cent, as compared with the previous year. The year 1963-64 showed an improvement in the production although the index at the level of 143.1 was lower than that in the year 1961-62. Production of wheat, pulses and oilseeds however declined by about 8.6 per cent, 12.7 per cent and 5.7 per cent respectively as compared with the previous year. Due to good weather conditions, agricultural production reached a peak level in 1964-65 and its index rose to 158.5, the highest level reached during the entire three Plan periods. The increase in agricultural production was 10.8 per cent—10 per cent in foodgrains production and 12.1 per cent in non-foodgrains production—over that of the previous year. But during 1965-66, due to severe drought and unfavourable weather conditions in many parts of the country, agricultural production received a severe set-back and its index fell by 16.3 per cent to 132.7, the lowest recorded during the Third Plan period. The index of foodgrains production similarly declined by 19.5 per cent to 120.9 while that of non-foodgrains production came down by 10.8 per cent to 156.4. The decline in production was shared by all major crops. Among foodgrains, the output of rice and wheat declined by about 21.5 per cent and 15 per cent respectively and among non-food crops, cotton, jute and groundnut were substantially lower by about 16 per cent, 25.7 per cent and 28 per cent respectively, as compared with the previous year.

As a result of severe drought for the second year in succession over large parts of the country and the consequent failure of crops in the western and north-eastern parts of the

country, agricultural production during 1966-67 marginally receded to 132.4. However, the index of foodgrains production, the movement of which was almost similar to that of total agri cultural production, witnessed a change and the index recorded an increase of 3.1 per cent over that of the previous year and stood at 124.6 during 1966-67.[2] Non-foodgrains production, on the other hand, showed a shortfall of 5.2 per cent from the level reached in 1965-66. The decline in production was more marked in the case of sugarcane which was of the order of 21.5 per cent as compared with the previous year.

The sharp year to year fluctuation in agricultural production poses a problem for calculating the growth rate of agricultural production. The usual method of assessing the growth rate by reference to the increase in production from the commencement to the termination of successive Five-Year Plans may not give a correct idea of the state of progress as the same will be affected by the seasonal conditions during the first and the last years of the Plan. In view of this, a more scientific method would be to estimate the annual linear or compound rates of increase in production by fitting regression equations to the three-year moving averages of production. Here again, the choice of the base year presents some difficulties. 1950-51 and 1951-52 were very bad years from the view of weather conditions. If the unsuitability of these years as the base year is accepted, the choice is to adopt the year 1949-50 as the base year, as is done in calculating the index numbers. Another option would be to compute the growth rates from the period beginning from 1952-53. The calculations based on this alternative are given in Table II though we shall be making use of the 1949-50 base for assessing the rate of progress during the Three Plan periods.

GROWTH RATES UNDER THE FIRST THREE PLANS (UP TO 1964-65)

The overall linear rate of growth of agricultural production during 1952-53 to 1964-65 came to 3.42 per cent per annum. On the basis of the methodology followed by the Union Minis-

2 Foodgrains production for 1967-68 is estimated between 95 to 100 million tonnes. Production of jute, cotton and oilseeds has also risen substantially.

TABLE II

ALL-INDIA LINEAR RATES OF GROWTH IN AGRICULTURE: 1952-53 TO 1964-65

(*Average* 1952-53 *to* 1954-55=100)

Crop/Group	Production (per cent)	Area* (per cent)	Productivity (per cent)
Rice	3.64	1.57	1.80
Jowar	1.99	0.40	1.57
Bajra	1.34	(—)0.20	1.62
Maize	3.08	2.48	0.51
Wheat	3.80	2.57	1.00
Total Cereals	3.05	0.93	1.96
Gram	0.85	1.16	(—)0.24
Total Pulses	0.75	1.42	(—)0.57
Total Foodgrains	2.75	1.02	1.60
Groundnut	5.64	4.40	0.84
Rapeseed and Mustard	3.86	3.34	0.50
Total Oilseeds	3.95	2.90	0.87
Cotton	3.81	1.27	2.25
Jute	5.20	4.01	0.85
Total Fibres	4.60	1.61	2.51
Tea	2.42	0.65	1.67
Coffee	11.65	3.03	6.47
Sugarcane	7.83	4.93	1.93
Total Non-foodgrains	4.79	2.56	1.79
All Crops	3.42	1.28	1.91

Source: Growth Rates in Agriculture, 1949-50 to 1964-65, *op. cit.*, Table 6, p. 31.

**Note*: Calculations of growth rates are based on Index Number Series, which claims to have eliminated the increase due to extension of statistical coverage. Doubts have been expressed regarding this having been done in the case of the Area Index. According to the growth rate figure given in this Table, the area during the First Plan increased by about 12.5 per cent (The Index for Area in 1955-56 is given as 115). In absolute number this increase would amount to about 45 million acres excluding the increase in coverage. Figures of land reclamation given by the Government for the period do not exceed 5 to 6 million acres. It is difficult to believe that the rest of the increase was due to the farmers' efforts at reclamation and increase in double cropping. And why did this effort suddenly stop in the Second Plan period? Therefore, there is reason to think that a part of the statistical coverage increase has crept into the Index Number. This has inflated the denominator for the calculation of the increase in productivity (Index of Production ÷ Index of Area). *Vide* M. L. Dantwala, "*Economic Development* and the Role of the Agricultural Sector in India," *op. cit.*

try of Food and Agriculture, the Reserve Bank of India has computed the growth rates in agricultural production for the three Plan periods and for the period ending 1966-67. During the three Plan periods (1951-52 to 1965-66), the linear rate of growth in agricultural production worked out to 3.41 per cent per year. The growth rate dropped further to 2.91 per cent per year during the period 1951-52 to 1966-67.[3] Judged in the light of comparisons of the historical and contemporary experience of other countries, the rate of growth during the three Plan periods is not unimpressive. It should, however, be noted that nearly half of this increase in the last decade was contributed by the expansion in the area under cultivation. It is obvious that under conditions in India, it would be unrealistic to expect a similar rate of contribution to agricultural production through expansion of area in future. Apprehension has, therefore, been expressed that once this contribution ceases, the growth rate is likely to be much slower than that experienced during the last decade. It is, therefore, necessary to examine this problem a little more closely. This can be done by dividing the period under consideration in three parts: the First Plan (but with the base year 1949-50) period, the period of the Second Plan (1955-56 to 1960-61) and the Third Plan (1961-62 to 1965-66). Table III gives the annual average rate of increase in production, area and productivity of important crops in these three periods. It should, however, be mentioned that since the increase (or decrease) has been calculated by reference to particular years, the result may have been affected by the weather conditions in those particular years. The decrease in jowar production, for example, in the First Plan reflects a severe damage to that crop in 1955-56, the last year of the Plan.

It will be seen that whereas during the First Plan, the area increased at the rate of 2.5 per cent per year, during the Second Plan, the rate of increase had already dwindled to 0.6 per cent. In contrast, the increase in productivity was 0.3 per cent per year

3 *Reserve Bank of India Bulletin*, Vol. XXII, No. 3, March, 1968, p. 336. With 1949-50 = 100, the linear growth rate in agricultural production during the period 1951-52 to 1966-67 works out to 2.88 per cent per year. The linear growth rate for foodgrains and non-foodgrains production comes to 2.31 and 3.67 per cent per year respectively during the same period.

TABLE III

ANNUAL AVERAGE INCREASE OR DECREASE IN PRODUCTION, AREA AND PRODUCTIVITY OF IMPORTANT CROPS IN THE THREE FIVE-YEAR PLANS

(in percentages)

Crops	First Plan			Second Plan			Third Plan*		
	Production	Area	Productivity	Production	Area	Productivity	Production	Area	Productivity
Rice	+2.4	+0.5	+1.8	+3.9	+1.2	+2.5	—1.6	+0.5	—2.3
Jowar (*Sorghum*)	—0.6	+1.9	—2.2	+7.8	—0.1	+8.1	—4.0	—1.4	—2.7
Wheat	+5.2	+4.5	+0.6	+4.8	+1.0	+3.0	+0.5	—0.2	+0.7
All Cereals	—	+1.8	+0.6	—	+0.6	+3.0	—1.5	—0.4	—1.3
Pulses	+3.1	+2.8	+0.2	+1.7	neg.	+1.8	—3.8	—1.8	—2.1
Foodgrains	+2.6	+2.0	+0.5	+3.5	+0.5	+3.0	—1.9	—3.5	—1.3
Groundnut	+2.1	+4.9	—2.2	+4.3	+4.4	—0.1	—1.5	+2.1	—3.7
Oilseeds	+1.4	+3.2	—1.5	+4.2	+2.4	+1.6	—0.6	+1.5	—2.1
Sugarcane	+3.3	+4.2	—0.7	+9.0	+5.4	+2.9	+2.0	+2.8	—0.9
Cotton	+9.0	+10.7	—1.0	+6.3	—1.1	+8.0	—1.7	+0.6	+2.1
Jute	+6.0	+8.2	—1.5	—2.1	—2.6	+0.6	+5.0	+5.3	—1.3
Non-Foodgrains	+3.3	+5.1	—1.4	+4.8	+1.3	+3.3	+0.3	+1.2	—1.0
All Group	+2.8	+2.5	+0.3	+4.0	+0.6	+3.2	—1.1	—0.3	—0.9

Source: *Agricultural Situation in India*, Vol. XVIII, No. 4, July, 1963, pp. 185-186.

* Figures for the Third Plan are computed from the Economic Survey of Indian Agriculture 1965-66, Directorate of Economics and Statistics, Ministry of Food, Agriculture, Community Development and Co-operation, Government of India (1967), Appendix Table Nos. 1.2—1.4.

during the First Plan and 3.2 per cent per year during the Second Plan. This clearly shows that there was a marked step-up in productivity in agriculture during the Second Plan and this increase was sufficient to make up for the decline in the rate of the expansion of the area under cultivation. During the Third Plan, both the area and productivity declined at the rate of 0.3 per cent and 0.9 per cent per year respectively, resulting in a decline of production of the order of 1.1 per cent per year. It may be said that changes in productivity contributed more than the changes in area to the fluctuations in production.

FOODGRAINS AND NON-FOODGRAINS PRODUCTION

It may be observed that the linear rates of growth of agricultural production per annum during 1952-53 to 1964-65 were higher than all-India in five States, namely, Punjab (5.56), Gujarat (5.12), Madras (4.91), Mysore (4.06) and Himachal Pradesh (3.93). The States of Bihar, Maharashtra, Rajasthan, Andhra Pradesh, Madhya Pradesh, Orissa and Kerala recorded moderate rates of growth of agricultural production, but lower than all-India. The rates of growth were low in three States, namely, West Bengal, Uttar Pradesh and Assam, signifying a sluggish pace of agricultural development in these States.[4] For more detailed analysis, we may revert to Table II. First, regarding production, it is apparent that the growth rate for non-foodgrains (4.79) was higher than that for the foodgrains (2.75).[5] But the

4 According to the study on growth rates of agricultural production during the period 1952-53 to 1961-62, the rates of growth of agricultural production in the States of Madhya Pradesh, Maharashtra and Bihar were higher than those of all-India. With the addition of three more years to the period of the study, these States showed growth rates of agricultural production lower than all-India during the period 1952-53 to 1964-65. The State of Gujarat has, on the other hand, moved from the 'lower than all-India' group to the 'higher than all-India' group. Further, during the period 1952-53 — 1961-62, the States of Orissa and West Bengal had recorded very low rates of growth of agricultural production. These States have shown some improvement during recent years. The States of Uttar Pradesh and Assam have, on the contrary, slid down the ladder of agricultural development and occupy the last but one and the last positions respectively. *Vide* Growth Rates in Agriculture, 1949-50 to 1964-65, *op. cit.*, p. 38.

5 According to the Reserve Bank of India estimates, the linear growth rate for foodgrains production during the period 1951-52 to 1965-66 worked out to 2.82 per cent per year and it declined to 2.36 per cent per year during the period 1951-52 to 1966-67. *Vide Reserve Bank of India Bulletin*, March, 1968, *op. cit.*

variations within each group are also quite marked. Thus, in the non-foodgrains group, the annual rates of increase for sugarcane (7.83) and for jute (5.20) are substantially higher than those for oilseeds (3.95) and particularly for tea (2.42) and for cotton (3.81). Within the foodgrains group, the variations are not so large, except for bajra (1.34) and for jowar (1.99) among the cereals group and for pulses (0.75) for which the rates of growth were low.

The extension of the area under cultivation has made a significant contribution to the increase in the production of most of the crops. Once again, the contribution of the extension of area was larger for the non-foodgrains group (2.56) than for foodgrains (1.02). Extension of area would depend primarily on the availability of the uncultivated but cultivable land in a particular region. Thus, it is found that the annual percentage increase in area varied between 3.23 for Rajasthan and 2.06 for Punjab to 0.27 in Andhra Pradesh, 0.44 in Maharashtra, 0.46 in Gujarat and 0.60 in West Bengal. In fact, the annual rate of increase in area exceeded 1 per cent only in six States, *viz*., Rajasthan, Punjab, Kerala, Madhya Pradesh, Assam and Madras. Subject to the limitation of the availability of reclaimable area, the allocation of the additional land between different crops would probably be governed by the profitability of the cultivation of the crops suitable for the area. This, in its turn, will depend in a large measure, on the relative changes in the prices of these crops.

Regional Variations in Production

Within the foodgrains group, the annual increase in the area between 1952-53 and 1964-65 was largest for wheat (2.57 per cent) and was distinctly lower for rice (1.57 per cent). The larger increase in the area under wheat may be partially explained by the fact of relatively larger increases in area under cultivation in the predominantly wheat-growing regions like the Punjab, Madhya Pradesh and Rajasthan. The predominantly rice-growing areas like Bihar, Orissa and West Bengal had very modest increases in the area under cultivation. The States of Andhra Pradesh and Madras which accounted for 11.5 to 11 per cent of the all-India rice production, recorded larger increases in

area under rice, 3.19 per cent each. It is interesting to note that Punjab, a relatively minor rice-growing State had the highest rate of growth of area (9.21 per cent) under rice. Within each region, however, the distribution of the additional land between various crops was probably governed by the relative changes in the prices of substitutable crops. This may be judged indirectly by reference to the relative increases in the production of food-grain and non-foodgrain crops in some of the States. The linear growth rates of production of all crops, foodgrains and non-food-grains, in different States during 1952-53 to 1964-65 are given in Table IV.

TABLE IV

STATE LINEAR RATES OF GROWTH OF AGRICULTURAL PRODUCTION DURING 1952-53 TO 1964-65

(*Average* 1952-53 *to* 1954-55 = 100)

States	All Crops	Foodgrains	Non-Foodgrains
1. Punjab	5.56	4.30	9.46
2. Gujarat	5.12	2.09	8.03
3. Madras	4.91	4.89	4.96
4. Mysore	4.06	3.71	4.91
5. Himachal Pradesh	3.93	4.23	1.63
6. Bihar	3.21	3.28	2.61
7. Maharashtra	3.19	2.29	5.15
8. Rajasthan	3.08	2.68	4.89
9. Andhra Pradesh	3.06	3.65	1.83
10. Madhya Pradesh	2.79	2.58	4.50
11. Orissa	2.72	2.60	3.40
12. Kerala	2.52	4.37	1.83
13. West Bengal	2.07	1.16	4.23
14. Uttar Pradesh	1.82	0.91	4.28
15. Assam	1.25	0.80	1.62
All-India	3.42	2.75	4.79

Source: Growth Rates in Agriculture, 1949-50 to 1964-65, *op. cit*, Table 13, p. 48.

It will be seen that as in the case of all crops, there are considerable variations from State to State, in the growth rates of the two major groups of crops, namely, foodgrains and non-food-grains. Even within the same State, growth rates of the two

groups have been quite divergent in some cases. In Gujarat, West Bengal and Uttar Pradesh, the rates of growth of food-grains production were below the all-India level, while that of non-foodgrains were very high. In Gujarat, the production of groundnut whose prices were very high throughout the decade, has increased at an annual rate of 11.04 per cent. In West Bengal, production of jute increased at an annual rate of 7.21 per cent. Even in those States where the annual increase in the production of foodgrains was relatively high, the increase in the non-foodgrains production was even higher. Thus, in the Punjab, as against an annual increase of 4.30 per cent in foodgrains production, the increase in non-foodgrains production was as much as 9.46 per cent; much of it was accounted by an increase in the production of cotton and sugarcane. The only States in which the rate of increase in production of foodgrains was larger than that of non-foodgrains are Kerala (4.37 and 1.83), Himachal Pradesh (4.23 and 1.63), Andhra Pradesh (3.65 and 1.83) and Bihar (3.28 and 2.61).

It is not possible to establish any precise association between increases in area (and production) with the relative changes in the prices of different crops. In Andhra Pradesh, it was obviously more profitable to increase production under rice at the cost of reducing the acreage under groundnuts. In contrast to this, Gujarat found it more profitable to increase the production of groundnuts in preference not only to foodgrains but also to commercial crops like cotton. It would, however, appear that all the States which could grow sugarcane, did substantially increase both the acreage and production of this crop, resulting in the highest increase (7.83 per cent) in all-India rates of production. In no small measure this can be attributed to the relatively higher prices of sugarcane with a guaranteed minimum. Similarly, West Bengal, the premier jute-growing State, increased the cultivation of jute substantially and in preference to the food crops. On the other hand, there was a decline in the production of jute in Bihar to the extent of 1.83 per cent due to the decline in the yield of the crop (—2.82 per cent) in spite of an increase in the area under the crop (2.29 per cent). In contrast, except Gujarat and Punjab, and to some extent, Madras and Rajasthan, there has not been much interest in expanding the production of cotton.

It is difficult to say to what extent the fixation of floor and the ceiling prices for cotton was responsible for this lack of enthusiasm. The feeling that the ceiling prices of cotton have been kept artificially low has grown in recent times.

Yield Trends

Another and probably more reliable information regarding the yield trends in respect of two commodities, rice and wheat, is available from a study conducted by V. G. Panse.[6] The study is based on a series of data on the yield of food crops based on random sampling crop-cutting surveys. The all-India estimates are based on these surveys. One important feature of this study is an attempt to measure the effect of weather factors on yields and eliminate the same to the extent possible from the estimates of yield trends. The results of this study comprising three distinct periods, *viz.*, pre-Plan, First Plan and Second Plan, are given in Table V.

TABLE V

AVERAGE YIELD PER ACRE

(in lbs.)

India/Important States	Pre-Plan (1946-47 to 1950-51)	First Plan (1951-52 to 1955-56)	Second Plan (1956-57 to 1960-61)	Difference (3) — (2) Average % per year	Difference (4) — (3) Average % per year
(1)	(2)	(3)	(4)	(5)	(6)
			Rice		
All-India	743	783	863	1.1	2.0 (2.2)*
Madras	881	1,024	1,184	3.2	3.1 (3.5)
Andhra Pradesh	1,009	1,164	1,286	3.1	2.1 (2.4)
Uttar Pradesh	513	480	543	—1.3	2.6 (2.9)
West Bengal	833	922	936	2.1	0.3 (0.3)
Mysore		(1,051)	(1,271)		(4.0)
			Wheat		
All-India	604	675	676	2.4	0.02
Uttar Pradesh	661	729	745	2.1	0.4
Punjab	879	925	919	1.0	—0.1
Madhya Pradesh	394	493	457	5.0	—1.5
Bihar	488	531	494	1.8	—1.4

*Figures in brackets refer to Series II available from the First Five-Year Plan.

6 "Yield Trends of Rice and Wheat in First Two Five-Year Plans." *Journal of the Indian Society of Agricultural Statistics*, Vol. XVI, No. 1, 1964.

It will be seen from Table V that in regard to rice, Plan effort has made a definite impact on yield, the average country-wide yield being higher by 40 lbs. per acre during the First Plan and by 80 lbs. per acre further during the Second Plan. The inclusion of certain new areas (Series II) for which data for the earlier period are not available, gives a somewhat higher figure of increase. Madras and Andhra Pradesh have shown the largest and the most consistent increase in the per acre yields of rice. The increases are large enough to retain their significance even after discounting for annual climatic variations. No other States showed such positive increase in the yield during the First Plan. West Bengal did show an average increase of 89.5 lbs. per acre during the First Plan over pre-Plan period, but this did not prove significant when tested against the annual variations in the yields. This conclusion is borne out by the fact that there was no further increase in the State during the Second Plan.

In contrast to rice, there is no evidence of any consistent increase in the yield of wheat per acre in any State either in the First or Second Plan, though the average countrywide yield for Five States—Punjab, Uttar Pradesh, Bihar, Madhya Pradesh and Bombay—does show an increase of nearly 12 per cent in the First Plan over the pre-Plan yields. One possible explanation of this increase is that the wheat harvest in some of the years in the pre-Plan quinquennium was badly affected by a severe rust epidemic which kept the yields at a comparatively low level. If so, the increase during the First Plan period does not necessarily reflect the impact of Plan effort. Once again, this observation is borne out by the fact that the average yield in the Second Plan period showed no progress on the country-wide basis. On the contrary, there was a decrease of 37 and 36 lbs. per acre in Bihar and Madhya Pradesh which, however, could be attributed to adverse climate.

Agricultural Production in Other Countries

It would be useful to compare the progress in agricultural production in India with that in other countries of the world. Table VI gives the average annual rate of growth of agricultural production and food production in the developing countries

during 1952-56 to 1963-65. It will be seen that the growth of agricultural production and foodgrains production compares favourably with some of the countries in the Far East. The performance of countries like Taiwan, Philippines, Thailand and Mexico points to the scope for stepping up the rate of growth in India.

TABLE VI

AVERAGE ANNUAL CHANGE IN AGRICULTURAL PRODUCTION AND FOOD PRODUCTION IN DEVELOPING COUNTRIES OF THE WORLD: 1952-56 TO 1963-65

Countries	Agricultural production	Food production
	Average annual percentage change (compound rate)	
Far East		
India	2.5	2.4
Burma	2.9	3.1
Ceylon	3.1	3.4
China (Taiwan)	4.4	4.4
West Malaysia	3.7	4.7
Indonesia	1.2	1.3
Pakistan	2.5	2.8
Philippines	3.2	3.1
Thailand	4.5	4.2
Near East		
Turkey	3.5	3.1
United Arab Republic	3.6	3.7
South America		
Brazil	4.3	4.6
Latin America		
Mexico	5.4	5.6

Source: The State of Food and Agriculture 1967, Food and Agriculture Organization of the United Nations (1967), p. 17.

CONCLUSION

The Third Five-Year Plan set a target of 30 per cent increase in agricultural production, as against an increase of 46 per cent achieved during the ten years preceding it. Projections made in the Fourth Five-Year Plan anticipate a rise of another 31 per cent by 1970-71.[7] Thus over the decade 1961-70, an increase of about 60 per cent in agricultural production is envisaged.[8] This means that the increase in agricultural production during 1961-70 needs to be stepped up by about twice the rate achieved during the preceding decade. The achievement of the targeted increase in agricultural production is nevertheless not an easy task. As mentioned earlier, nearly half the increase in agricultural production during the last decade was the result of an increase in the area under cultivation. The scope for increasing output by increasing the area under cultivation in the future is only marginal. Efforts will have therefore to be directed towards increasing agricultural production through increased productivity. The prevailing low yields do offer great scope for improvement. The next chapter discusses in detail the measures for increasing agricultural production.

7 Fourth Five-Year Plan—A Draft Outline, Planning Commission, Government of India (1966), p. 39.

8 During the five-year period 1966-71, an annual rate of increase of about 5.6 per cent in agricultural production — 6.1 per cent increase in foodgrains and 4.8 per cent increase in non-foodgrains — has been envisaged as against the anticipated rate of growth of agricultural production at 2.8 per cent per annum comprising about 2.6 per cent increase in foodgrains and 3.3 per cent increase in non-foodgrains during the Third Plan. *Vide* Approach to Agricultural Development in the Fourth Five-Year Plan, Ministry of Food and Agriculture, Government of India, 1964 (1966), p. 46.

CHAPTER V

CROP PRODUCTIVITY—PROBLEMS AND PROGRAMMES FOR IMPROVEMENT

A basic objective of economic policy for agriculture is to increase its productivity. In a large measure, this would depend upon the application of scientific research to all agricultural operations. The main factors influencing productivity are (*a*) the use of improved seeds, (*b*) control of pests and crop diseases, (*c*) provision of irrigation facilities, (*d*) prevention of soil erosion, (*e*) use of manures and fertilizers, (*f*) improved tools, and implements, (*g*) better systems of cropping, in particular, better rotations and use of more fodder crops. These factors have to be viewed together in any effort designed to increase production. Even the limitations of season and climate can be overcome in some measure by selecting suitable techniques.[1]

In the post-war period, especially with the inception of planning for agricultural development, concerted efforts are being made to improve techniques of production and to raise productivity in agriculture. The principal programmes in this respect are reviewed below.

IMPROVED SEEDS

The most outstanding achievement of modern agriculture is the production of improved varieties of seed for different crops. In India the cultivator is generally well aware of the importance of good seed; at least in the matter of improved seeds, the apathy of the cultivator cannot be said to be the main reason for the comparatively small area under improved varieties.

The Indian Council of Agricultural Research has devoted considerable attention to the introduction of improved varieties of seeds. The efforts during the pre-Independence period, how-

1 See Factors Affecting Rice Production, Food and Agriculture Organization of the United Nations, Agricultural Development Paper, No. 45 (1954), p. 27.

ever, were mostly confined to cash crops such as cotton, sugar-cane, etc. With the exception of wheat, the main foodgrains—rice, millets and pulses—were grown chiefly from the indigenous traditional varieties. Even in the last year of the Second Five-Year Plan (1960-61), only 20 per cent of total area under food crops was estimated to be covered with improved seeds.[2] The estimated area under important crops covered by improved seeds in 1957-58 is shown below in Table I.

TABLE I

ESTIMATED AREA UNDER IMPROVED SEEDS FOR DIFFERENT CROPS IN 1957-58

(*in million acres*)

Crop	Area
Rice	16.6
Wheat	18.6
Jowar	8.8
Bajra	2.9
Barley	4.9
Ragi	3.7
Small millets	1.2

Source: Indian Council of Agricultural Research, New Delhi.

A recent sample study by the Programme Evaluation Organisation (1961) estimated the percentage of area under improved seeds at 25 per cent for paddy and 50 per cent for wheat. The percentage was only 13 for jowar.[3] During the Third Plan, it was envisaged to extend the area under improved seeds from 55 million acres in 1960-61 to 204 million acres by the end of 1965-66. As against this, the achievement in 1965-66 was 112 million acres

2 Study of the Multiplication and Distribution Programme for Improved Seed, Programme Evaluation Organisation, Planning Commission, Government of India (1961), p. 19.

3 *ibid.*, pp. 153-194.

or about 55 per cent of the target.[4] In 1966-67 improved seeds of foodgrains are estimated to have covered about 115 million acres.[5]

With the object of ensuring that the entire area under foodgrains was covered with improved seeds during the Fourth Plan period, a target of 274 million acres is proposed for 1970-71. In 1966-67, the High-Yielding Varieties Programme (H.V.P.) which seeks to achieve a breakthrough in agricultural production by progressively increased use of newly identified and evolved high-yielding strains of paddy, wheat, jowar, bajra and maize was initiated. These high-yielding varieties include Taichung Native 1, Taichung 64, Tainan 3 and I.R.-8 varieties of paddy, certain Mexican varieties of wheat and hybrid varieties of jowar, bajra and maize. The Ministry of Food and Agriculture has drawn up a comprehensive action programme for these high-yielding varieties of crops. The main feature of this programme is to saturate with high-yielding varieties of improved seeds about 12.5 million acres for paddy, 8 million acres for wheat and 4 million acres each for hybrid bajra, hybrid jowar and hybrid maize, making a total of 32.5 million acres by 1970-71. In the *kharif* season of 1966-67, an area of 1.82 million acres of land with assured water supply was brought under the H. V. P. During the *rabi* season the target of coverage under the programme was fixed at 4.4 million acres. It is proposed to extend progressively the coverage under the H. V. P. during the subsequent years of the Fourth Plan and the target for 1967-68 was fixed at 15 million acres, comprising 7.9 million acres during the *kharif* and 7.1 million acres during the *rabi* season. The actual achievement for the *kharif* season is estimated at 5.9 million acres. Efforts have been made to step up the area under high-yielding varieties during the *rabi* and summer seasons, especially through increased coverage under wheat and paddy, with a view to achieving the overall target fixed for 1967-68. The target for 1968-69 is to cover 21 million acres, comprising 8.4 million acres

4 Economic Survey of Indian Agriculture 1965-66, Directorate of Economics and Statistics, Ministry of Food, Agriculture, Community Development and Co-operation, Government of India (1967) (mimeo.), p. 9.

5 Report 1966-67, Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture), Government of India (1967).

under paddy, 4.9 million acres under wheat and 7.7 million acres under hybrid maize, jowar and bajra.[6] The success in this direction will however depend on the efficiency with which production, multiplication and distribution of improved and high-yielding varieties of seeds are organised and co-ordinated.

Multiplication and Distribution of Improved Seeds

The main problem in the case of improved seed is one of evolving varieties of seed suitable for the different climatic and ecological conditions in the various regions of India and of making such seed available to the farmer on a dependable basis. The programme for the multiplication and distribution of improved seed in India has three broad phases. The first phase covers the preparatory and advance action which is the responsibility solely of the Government machinery. This includes evolving of improved varieties, keeping in view the desired characteristics—yield, fertilizer response, disease susceptibility, duration, etc.—, their multiplication on the breeder's farms and further multiplication on seed farms as foundation seed. Most of the functions in this phase are of a technical nature. The second phase in the programme relates to the activities of registered farmers, multiplying foundation seed on their farms and co-operative or other institutions undertaking seed distribution to the mass of cultivators. The activities in this phase are partly technical and partly administrative. Lastly, the success of the seed saturation programme would depend on the willingness of the cultivators to accept the improved seed as superior to the seed currently used by them. The function in this phase are largely in the nature of extension organisation and education.

The approach and contents of the programme for improved seed outlined above have been formulated in the three Plans. Establishment of seed farms in all development blocks to meet the requirements of foundation seed of improved varieties was one of the principal programmes undertaken in the Second Plan. In all, about 4,000 seed farms are reported to have been set up by the end of the Second Five-Year Plan. During the Third Plan,

6 Report 1967-68, Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture), Government of India (1968), pp. 15-16.

800 more seed farms have been established. The National Seed Corporation set up in 1963, has been entrusted with the task of popularising the improved qualities of seeds (other than paddy and wheat) evolved by research stations. The Corporation has also been made responsible for the supply of foundation seed of all the hybrid varieties throughout the country and for the certification of the multiplied seeds to ensure quality. Several State Governments have initiated preliminary action to set up State seed corporations for their respective States. A Draft Seed Bill was passed in the Parliament in 1964 for laying down of standards of quality and for making arrangements for seed analysis, inspection, certification and regulation of sale of notified seeds.

The approach in the Fourth Plan will be to develop seed villages with guaranteed off-take and certification as a step towards area saturation. The States have been requested to strengthen the existing seed multiplication farms, to establish new large sized farms up to 500 acres, to set up seed villages and to put up seed corporations for looking after production, certification, storage and distribution of improved seeds. As regards high-yielding varieties of seeds, the nucleus seed for paddy will be produced by the Central Rice Research Institute, Cuttack, while breeders' seed will be produced at the Central and Regional Co-ordination Units. The breeders' seed will be supplied to the block seed farms for production of foundation seed and the foundation seed will be further multiplied through the agency of the registered growers located in specially selected villages or other compact blocks. The total requirement of paddy seed for the proposed area of 12.5 million acres during the Fourth Plan is estimated to be about 1,25,000 tonnes. In the case of wheat, the nucleus seed will be produced at the Indian Agricultural Research Institute and further multiplied in the mechanised farm of Government of India at Suratgarh and the farm of the Agricultural University at Pant Nagar in Uttar Pradesh. The breeders' stock thus produced will be multiplied as foundation seed on the seed farms which will be ultimately multiplied through registered growers before it is made available to the cultivators. The total requirement of wheat seed for saturating

an area of 8 million acres during the Fourth Plan period works out to be 3,20,000 tonnes. The seeds of hybrid jowar, bajra and maize are being produced by the National Seeds Corporation. The entire seed multiplication programme is being subjected to quality control. The success of this programme will, however, depend on the efficiency with which production, multiplication and distribution of high-yielding varieties of seeds are organised. The experience so far gained indicates that unless efficient organisation, co-ordinated arrangements, and stricter enforcement of quality control are achieved, serious problems are likely to be faced in ensuring the supply of adequate quality of seed for different phases of saturation programme.

CONTROL OF PESTS AND PLANT DISEASES

Insects, pests, fungoid diseases and weeds damage crops and nullify the benefits of other improvements such as better seed and better manure. The evil has shown signs of spreading with improvement in transport. The loss suffered through damage done by diseases and pests to crops at various stages of growth from sowing to harvesting and in storage and transportation is estimated to be 20 per cent of total crop output. Nearly 40 diseases and over 80 species of insects are known to attack the rice crop in the field and in storage, the most widely prevalent diseases being blast, *helminthos poriose*, stem and foot rot and the pests are stem borers, gall flies, grass hoppers and caterpillars. As regards wheat, millions of tonnes of wheat were destroyed by the vast epidemic rust in 1947 and 1954. In 1950 and 1957, the potato disease attacked this crop over wide areas in Bihar, Uttar Pradesh and Punjab causing a loss of over 50 per cent of the crop.

Some amount of pioneering work has been done by the State Agricultural Departments and the Indian Agricultural Research Institute in the study of life habits of important pests and the methods of control of certain diseases. Another field in which systematic investigations have recently been started is the quantitative estimates of the incidence of pests and diseases on crops. The Indian Council of Agricultural Research is currently engaged in conducting a study on the problem of incidence of stem borer and gall fly, etc., on rice.[7]

7 Annual Report of the Indian Council of Agricultural Research, 1961.

The Plant Protection Organisation at the Centre consists of a Directorate with the Plant Protection Adviser as its head and three main divisions: (i) Entomology, (ii) Plant Diseases and (iii) Quarantine. The Directorate advises the States on the control of various diseases and pests and helps them in setting up plant protection organisations in their areas. Locust control work is also its responsibility. The primary function of the organisation at the Centre and in the States is to fight outbreaks in epidemic form. It also undertakes investigations of plant diseases and pests and the prescription of measures for their eradication.

The method of control adopted for preventing damage to crops can be classified under four categories: (i) quarantine, *i.e.*, the prevention of entry of plant and animal pests from countries outside India, (ii) biological control, *i.e.*, employment of an insect to check the development of another insect, (iii) cultural methods, *i.e.*, variation in cultural practices such as the introduction of resistant varieties of crops, changes in rotation, time of sowing of plant, deep and shallow cultivation, giving or withholding of irrigation, etc., and (iv) chemical treatment. In the past, owing to lack of efficient quarantine arrangements, injurious insects and pests frequently entered the country and spread widely. Recently, quarantine and fumigation stations have been set up at Madras, Calcutta and Bombay. Plant quarantine measures are also being devised to prevent the spread of diseases and pests through inter-State movement of plant materials. Biological control and pest control methods have been adopted widely against sugarcane borers and nepenthes of coconut in the South. As regards cultural methods, changes in the time of sowing have considerably helped in protecting wheat from the hessian fly and cotton from the tirak disease. Disease resistant varieties of wheat, rice and potato are being successfully developed and adopted. In recent years, the use of insecticides and fungicides like chlorinated hydrocarbon compounds and organic-phosphorus compounds has grown considerably. Many antibiotics have been used to control bacterial plant diseases. Measures against the locust menace, which causes considerable damage to crops in the north-western and western parts of India

are being taken by the Central Locust Organisation in the form of spraying and dusting of chemicals on a large scale in the breeding areas. To intensify these measures, aeroplanes, helicopters and other equipment are being obtained under the Technical Assistance Programme. During 1967-68, the Aerial Unit of the Directorate of Plant Protection sprayed over an area of 2,02,177 acres against pests and diseases.

On the whole, however, over the past decade, plant protection measures have lagged behind other agricultural programmes. In the Second Plan, the programme had covered about 16 million acres of land which might seem a great stride from a mere 25,000 acres in 1945-47 and 6.1 million acres in 1956-57. By the end of the Third Plan period, the area covered by plant protection measures is estimated at about 50.3 million acres, which is slightly higher than the target of 50 million acres. A target of 137 million acres to be covered by 1968-69 has been proposed for plant protection. This includes an area of 50 million acres under seed treatment, 20 million acres under rat control, 20 million acres under polyphagous and soil insect treatment, 40 million acres under intensive treatment and 7 million acres under weed control. A comprehensive and effective plant protection measure has been considered as an essential concomitant in the high-yielding varieties programme. As a result, the Fourth Plan target for area to be covered by plant protection measures has been revised to 210 million acres against 137 million acres as proposed earlier. This would involve a more than four-fold increase in the coverage of the area under plant protection measures in three years over the estimated level of 41 million acres during 1965-66. The agricultural area benefited by plant protection measures increased to 60 million acres during 1966-67. The anticipated achievement during 1967-68 has been estimated at 90 million acres. The proposed Training Institute-cum-Field Station for plant protection started functioning in Hyderabad from January, 1967.

The plant protection measures fail to bear effect unless they are carried out swiftly and at a short notice on a compact area. Indian cultivators are generally inclined to undertake plant pro-

tection measures only as a curative measure when the crop is infested or diseased. The desirability and advantage of undertaking plant protection operations as a preventive measure needs, therefore, to be further impressed upon the farmers. For this, it is necessary to take up plant protection measures as a compulsory contributory plant protection service, reduce the cost of materials and equipment, make them available in requisite quantities, provide the necessary credit facilities, strengthen the extension service, equip them with the necessary audio-visual aids and carry out promotional and educational activities to the maximum extent. Since the cropped area benefited by plant protection measures is still a small percentage of the total cropped area, it is necessary to pursue a more vigorous programme for plant protection through adequate supply of manually operated sprayers, dusters and pesticides to farmers and their organisations.

IRRIGATION

The most important factor for improving yields is adequate and timely water supply. The total irrigated area in 1960-61 was only 68.8 million acres or 21 per cent of net area sown of about 320 million acres. Even in irrigated areas, water is sometimes in short supply resulting in delayed planting and causing losses amounting to 20 to 30 per cent of normal yields.[8] In regions of heavy rainfall, absence of proper drainage facilities causes erosion of soil. In areas of low rainfall, yields are kept down for want of sufficient nutrients in the soil; manures and fertilizers can do little good in the absence of adequate water supply.

Evaluation of Government Policy

The attention of the Government to the need for irrigation works was drawn sharply by the various famines during the 19th century, but Government was reluctant up to the end of the century to face up to the question in all its seriousness mainly out of consideration of cost. Their policy was to develop productive irrigation works and to neglect protective ones. It was in 1901 that the Irrigation Commission emphasized the protec-

8 Agricultural Legislation in India, Vol. III — Agricultural Production and Development, Government of India (1952), p. viii.

tive value of irrigation works and pointed out that the indirect savings they may bring about by reducing the cost of famine relief, and by obviating the need for remissions of the land revenue, etc., would often make up for the expenditure on such works. More than this, however, the Commission argued that "the expenditure which the Government may legitimately incur on famine prevention cannot be limited by a consideration of the reduction in the future cost of famine to the State which will result from such expenditure" and that "a much higher scale of expenditure may be justified for the sake of saving the inhabitants of insecure tracts from all the losses and demoralisation and miseries of famine."

As a result of the above recommendations, fresh Provincial surveys were made and a large number of new irrigation projects were undertaken. Till 1919, all the irrigation projects in India were controlled by the Government of India and were sanctioned with the approval of the Secretary of State. Under the Reforms of 1919, irrigation was classed as a Provincial subject. Since then, there has been greater activity in regard to irrigation and several projects have been undertaken. The Sutlej-Valley works were sanctioned in 1921-22 and were completed in 1932-33 at a cost of Rs. 33.31 crores. In Bombay, the Bhandadhara Dam and the Lloyd Dam at Bhatgar were completed in 1925 and 1926 respectively. In Uttar Pradesh, the Sarda Canal was opened in 1928 and it irrigates about 8.5 lakh acres. The Cauvery-Mettur project, started in 1925 and completed in 1934 at a cost of Rs. 737 lakhs, serves an area of 1.3 million acres. This scheme also includes supply of hydro-electric power for industrial purposes.

The advent of Independence provided the necessary impetus for the evolution of a national policy in irrigation. The need to strengthen efforts in developing irrigation was further emphasized by the fact that with the partition of the country in 1947, major portion of the irrigated area and area under rice, wheat and jute went over to Pakistan and thereby disproportionately reduced their production within the country. This gave added impetus to the expansion of irrigation, from large as well as

small projects as a necessary condition for diversifying agriculture and increasing crop yields. This recognition was given immediate effect with the initiation of planning for the all-round development of the country. This is evident from the financial provisions made for irrigation during the three Plan periods.

The First Plan allotted Rs. 400 crores or about 20 per cent of the total plan outlay for irrigation.[9] Highest priority was given in the First Plan to the completion of the projects already under construction and on which considerable sums of money had already been expended. It was not possible, therefore, to include many new works of irrigation in the First Plan. In the Second Plan, Rs. 571 crores, constituting about 12 per cent of the total plan outlay, were allotted for irrigation. But there was a significant change in the nature of the irrigation programme in the Second Plan. There was a shift in emphasis from multipurpose to single purpose schemes, and from major to medium irrigation projects. Thus, as compared to about 9 schemes (including power projects), each costing Rs. 30 crores and above in the First Plan, there was not a single scheme in this category in the Second Plan. The Third Plan allocated Rs. 900 crores or about 12 per cent of the total outlay for irrigation. The huge investment involved in major irrigation projects and the slow pace of utilisation of the irrigation facilities created during the First and Second Plans led to the consideration of shifting the emphasis to minor irrigation works at the time of the formulation of the Third Plan.[10]

The aggregate estimated cost of major and medium irrigation schemes included in the First and Second Plans is Rs. 1,400 crores. By the end of the First Plan, an outlay of Rs. 300 crores was incurred on these schemes. The outlay on these schemes in the Second Plan was estimated at Rs. 380 crores. In the Third Plan, these schemes required an outlay of about Rs. 436 crores.

9 Including flood control.

10 Irrigation projects costing more than Rs. 5 crores each are classed as major schemes and those costing between Rs. 5 crores and Rs. 10 lakhs as medium schemes. Schemes costing Rs. 10 lakhs or less are classed as minor schemes provided they do not form part of any existing major or medium scheme.

leaving a balance of about Rs. 214 crores to be carried over in the Fourth Plan. The estimated outlay on new schemes included in the Third Plan is Rs. 164 crores, requiring an additional Rs. 200 crores in the Fourth Plan for their completion. The likely expenditure in the Third Plan on major and medium irrigation is Rs. 572 crores as against the proposed target of Rs. 600 crores. The carry-over of outlay into the Fourth Plan on approved continuing schemes, excluding the schemes which require only marginal outlays to complete them is of the order of Rs. 870 crores. A few of the larger of these schemes will spill into the Fifth Plan, the amount of carry-over being of the order of Rs. 200 crores. The outlay proposed for irrigation in the Fourth Plan is Rs. 849 crores including Rs. 24 crores for Tenughat Dam which is being constructed primarily for supply of water to the Bokaro Steel Plant.

In the First Plan, an outlay of about Rs. 85 crores was originally provided for minor irrigation schemes against which the amount actually spent was Rs. 45.83 crores. In the Second Plan, an outlay of Rs. 121 crores was provided for minor irrigation schemes under the Community Development and National Extension Programme and Agricultural Programmes put together. However, in 1958, this outlay was revised upwards to Rs. 147.6 crores. Up to 1959-60, a sum of Rs. 160.61 crores or about 72 per cent of the revised outlay was spent on these schemes. The estimated outlay spent on minor irrigation in the Third Plan was Rs. 269 crores. In the Fourth Plan, Rs. 520 crores have been provided for minor irrigation schemes.

Progress in Irrigation

The net area under irrigation, which was 51.5 million acres or 18 per cent of the net area sown in 1950-51, increased to about 68.6 million acres in 1960-61, forming 21 per cent of the net area sown. The net area irrigated in 1960-61 represented an increase of 33 per cent over 1950-51. A net area of 85.8 million acres, constituting about 28 per cent of the net area sown, is estimated to be irrigated by 1965-66, representing an increase in irrigated area of 75 per cent over 1950-51.

Table II shows the proposed irrigation targets and achievements in the Five-Year Plans. During the First Five-Year Plan, it was proposed to bring under irrigation an additional area of 19.7 million acres, 8.5 million acres from multipurpose and major irrigation projects and 11.2 million acres from minor irrigation works. Thus, the net area irrigated was expected to increase to 71.2 million acres in 1955-56 from 51.5 million acres in 1950-51. However, at the end of the First Plan, the area actually irrigated was 56.2 million acres. Thus only 23.8 per cent of the targeted increase could be achieved. As compared to the target of 8.5 million acres from the major and medium projects, the additional net area irrigated was only about 2.9 million acres. An additional area of 1.8 million acres was irrigated from minor irrigation sources. The gaps between the targets and achievements were still wider in the Second and the Third Plan.

TABLE II

IRRIGATION TARGETS AND ACHIEVEMENTS

(in million acres)

	Major and medium irrigation		Percentage of achievement over target	Minor irrigation		Percentage of achievement over target
	Target	Achievements		Targets	Achievements	
Base Level 1950-51	--	22.6	--	—	33.2	
First Plan 1951-56	6.3	3.1	49.2	11.2	9.5	84.8
Second Plan 1956-61	12.0	5.2	43.3	9.0	9.0	100.00
Third Plan 1961-66	12.8	7.7	60.1	12.8	13.8	107.8
Fourth Plan	9.0	—	—	17.0	--	—

Source: Agricultural Development in the Fourth Plan, Agriculture Division, Planning Commission, Government of India (1965) (mimeo.).

The achievement was however relatively better for minor irrigation works in the latter two Plans. There has been an appreciable and steady increase in the percentage of utilisation from the First Plan onwards. The utilisation of irrigation potential has improved over the Second Plan from 48 per cent to 71 per cent and is expected to be 87 per cent by the end of the Third Plan. The additional irrigation potential created under major and medium projects between 1951-52 and 1965-66 was 18 million acres (gross) and actual utilisation was estimated at 13.8 million acres or 89 per cent of the potential.[11] The progress in major and medium irrigation during the three Five-Year Plans is indicated in Table III. The area which can be ultimately irrigated by major and medium irrigation schemes is about 112 million acres (gross). At the beginning of the First Plan in

TABLE III

PROGRESS OF IRRIGATION (MAJOR AND MEDIUM SCHEMES) DURING THE FIVE-YEAR PLANS

Year	Actual area irrigated (in million gross acres)
1950-51	23.8
1955-56	26.9
1960-61	32.1
1965-66	37.6
1970-71	46.6

Source: Fourth Five-Year Plan — A Draft Outline, *op. cit.*, p. 64.

1950-51, the gross area irrigated from all sources was about 56 million acres, of which 24 million acres were irrigated from major and medium schemes. With the creation of irrigation facilities for an additional area of 18 million acres from such schemes in the three Plans, the area left over for future development through major and medium schemes is about 70 million acres.[12]

11 Fourth Five-Year Plan — A Draft Outline, Planning Commission, Government of India (1966), p. 216.

12 *ibid.*, p. 215.

By 1964-65, the percentage of gross irrigated area to the total under cultivation was highest in Madras with 45.5, followed by Punjab (44.4) and Jammu & Kashmir (34.9). In the middle ranges were Andhra (30.2), Uttar Pradesh (28.0), Assam (24.6), Orissa (23.9), West Bengal (22.7), Bihar (20.4), Kerala (19.8) and Rajasthan (13.4). States where less than 10 per cent of area was irrigated were Mysore (9.9), Gujarat (8.2), Maharashtra (7.0) and Madhya Pradesh (5.8).

Among the various sources of irrigation, minor irrigation works using pumps, renovation of old and construction of new tanks, wells, *bhandaras*, etc., constitute the most important source of irrigation. For undivided India in 1920-21, of the total net irrigated area of 48.9 million acres, 59 per cent was irrigated from minor sources. With the development of Government canals in the 'thirties and the 'forties, the proportion of the area irrigated from minor sources declined to 55 per cent in 1930-31 and further to 52 per cent in 1942-43. During the planning period, minor irrigation once again assumed a significant role in the development of agricultural production in the country. Out of the total net irrigated area of 64.6 million acres in 1964-65, 40.2 million acres (about 62.3 per cent of the total irrigated area) were irrigated by minor irrigation works. On an average, for the three year period 1962-63 to 1964-65, of the total irrigated area of 64 million acres, wells accounted for about 30 per cent, tanks for 18.3 per cent, small private canals for 5.7 per cent and other minor sources for 9.5 per cent.[13] The long-term potential for the development of minor irrigation has been estimated at 75 million acres (gross), made up of 30 million acres from surface water and 45 million acres from ground water resources.[14] The actual level of development expected to be reached at the end of the Third Plan period is about 50 million acres. The target for minor irrigation in the draft Fourth Plan has been fixed at 17 million acres.

In the Fourth Plan, the conception of irrigation for drought protection is being replaced by one of irrigation for intensive

13 Indian Agriculture in Brief. Eighth Edition, Directorate of Economics and Statistics, Ministry of Food, Agriculture, Community Development and Co-operation, Government of India (1967).

14 Fourth Five-Year Plan — A Draft Outline, *op. cit.*, p. 186.

production. Accordingly, since 1966-67 priority has been assigned in the field of minor irrigation to schemes like pump-sets, tube-wells, bore-cum-dug wells, etc., which can be completed quickly and yield assured irrigation. During 1967-68 about 2 lakh masonry wells were expected to be dug, 2 lakh pump-sets installed and 42,000 private tube-wells and filter points and 2,000 State tube-wells constructed, benefiting an area of about 3.4 million acres. The programmes of electrical pump-sets and rural electrification are being closely dovetailed to energise the maximum number of pump-sets with maximum economy. During 1965-66 and 1966-67, about 2.5 lakh electric pump-sets were energised. A Water Utilisation Cell has been set up to give special attention to water utilisation in the command areas of both major and medium irrigation works. A composite action programme called the Ayacut (Command Areas) Development Programme has been drawn in order to ensure speedy and full agricultural benefits from irrigation projects. This programme envisages an integrated approach, use of improved agricultural practices — land levelling and shaping, construction of field channels, supply of inputs, crop planning, etc., — in relation to irrigated farming, co-operation and development of rural industries. It is proposed to cover about 2 million acres of unutilised irrigation potential during the Fourth Plan. Centrally sponsored pilot projects are proposed to be implemented in compact blocks, each covering about 9,880 acres (4,000 hectares) to be located mainly in ayacuts. Ten pilot projects have been finalised — two under Nagarjuna Sagar Project (Andhra Pradesh), one each under Kakrapar Project (Gujarat), Chambal Valley Project (Madhya Pradesh), Tungabhadra Project (Mysore), Bhakra Nangal Project (Punjab), Dohrighat Pumped Canal (Uttar Pradesh), DVC Project, State Tube-Wells and Lift Schemes and Mayurakshi Project (West Bengal).[15]

Thus, in the immediate programme of extension of irrigation, small and medium irrigation works have an important part to play. They have some definite advantages. They involve smaller capital outlay and can be executed in a much shorter

15 Report 1967-68, Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture), Government of India, *op. cit.*, pp. 17-19.

period. It is however necessary to note some of the drawbacks of medium and minor modes of irrigation such as tube-wells, tanks and wells. With tube-wells, it becomes uneconomical to locate them away from the main hydel-line. Tanks in many regions tend to get silted necessitating desilting at regular intervals. In regions where the water-table is not sufficiently high, sinking of wells may prove a disproportionately costly proposition. An important drawback of medium and minor modes of irrigation arises out of their small catchment area. In years of low rainfall when the need for irrigation is urgent, they may fail to provide irrigation water in sufficient quantities.

SOIL CONSERVATION

The best possible use of land and water, on the basis of ascertained knowledge on topography and climate, for the maximum benefit of society, has come to be known as soil conservation.[16] Soil erosion is an old phenomenon in this country and has left its mark over wide tracts and contributed to low productivity. The pressure of increasing population and indiscriminate encroachment on the natural protection of the soil have let loose the forces of destruction.

The factors responsible for soil erosion are: (1) deforestation, (2) over-grazing, (3) ploughing or clean cultivation of sloping land and (4) burning of forest as in *jhuming* — shifting cultivation. Erosion occurs not only in areas of heavy rainfall but also in dry regions. The problem is to reduce the velocity and the amount of water running off the surface.

It is estimated that in the country as a whole about 200 million acres, that is, almost a fourth of the country's land surface suffers from erosion.[17] On the whole, about 2 per cent of surface soil is lost every year through erosion.[18] According to agricultural

16 Soil conservation is sometimes taken to mean prevention of deterioration or protection from destruction rather than a positive change for the better. But the term has a positive connotation, *viz.*, the best possible use of land and water.

17 Third Five-Year Plan, Planning Commission, Government of India (1961), p. 367.

18 Paper read by Captain V. M. Chavan, before the meeting of the Crops and Soils Wing, Indian Council of Agricultural Research, March, 1950.

experts, about 60 per cent of the rural areas in the Punjab are affected by soil erosion.[19] The survey of 50,000 acres carried out in the erstwhile Bombay State also disclosed that only 17 to 23 per cent of the area is not affected by erosion, while 60 per cent is affected so seriously that only 9 inches of the top soil is left.[20]

The problem exists in almost all States. In Gujarat, there is the problem of arresting the onward march of the Kutch and Rajasthan deserts and of preventing the big rivers from cutting into fertile alluvial soil on their banks and forming what are called *Kotars*. In the Deccan and Karnatak, the land is undulating and measures have to be taken mainly to prevent sheet erosion and gully formation. Over a large part of India, the people have accepted a slowly deteriorating environment as a part of the scheme of things; the vast majority is unaware that erosion is slowly eating into the soil.[21]

The measures for controlling erosion and restoring the productivity of eroded land can be broadly grouped into four types: (1) regulation of land use in accordance with physical characteristics, (2) afforestation and preservation of forests by scientific forest management, (3) improvement of land use practices which include such measures as putting the upper slopes into grass, ploughing along the contours and strip cropping on sloping lands. proper crop rotations, application of adequate manure and fertilizers, care of fallows and other uncultivated lands and (4) engineering measures such as construction of bunds and terraces, check dams, channels for drainage of surplus water, gully plugging, etc.

The forest and agricultural departments in India have some achievements to their credit in initiating measures for control of soil erosion, but the problem has not been tackled so far on a comprehensive basis. The Russell Report observed that protection against erosion should be the responsibility of Government; it should not be left entirely to the individual. It also recommended

19 *Irrigation and Power*, Volume IX, No. 2, April, 1952, p. 161.

20 Proceedings of the U.N. Scientific Conference on Conservation and Utilization of Resources, Vol. VI, Land Resources (1951), p. 127.

21 G. V. Jacks and R. O. Whyte: The Rape of the Earth (1939), pp. 86-88.

the holding of annual soil conferences where experts in forestry, animal husbandry and soil could meet and discuss the problems of different areas and suggest suitable remedies.[22] The Crops and Soils Wing of the Indian Council of Agricultural Research (ICAR) has done considerable work along these lines.

Since Independence, soil conservation has received a prominent place in agricultural improvement programmes. The Planning Commission has recognised that a large part of the soil conservation work has to be done ultimately by the farmers. For this purpose, it has envisaged a Central Organisation as well as corresponding State Organisations to aid in the dissemination of knowledge about the nature of the erosion problem to the farmers so as to enlist their active participation in the programmes for controlling erosion. Improvement in farming practices is one of the measures of control which depends entirely on farmers. Government can only convince them of the need for such improvement through demonstration of the correct methods. It must be emphasized that soil conservation involves co-ordinated and co-operative endeavour. It is no use one man constructing bunds in his field if that field is unprotected from the wash delivered on it by untreated land above. This is also true of many other improvements such as use of pesticides.[23]

Several States have passed legislation for ensuring that the necessary action is taken by the owners of land to prevent soil erosion and to facilitate land improvement. The solution of the problems of soil erosion is linked with adequate provision of grazing areas, enclosures to prevent indiscriminate grazing and wider introduction of fodder crops which in turn would mean not only an improvement in livestock but also more manure and therefore greater fertility. In the Second Plan, about Rs. 18 crores were spent on carrying out soil conservation works. During the First and the Second Plan, soil conservation measures were carried out over an area of 3.2 million acres of agricultural land. The main item was contour-bunding and terracing

22 Sir John Russell: Report on the Work of the Imperial Council of Agricultural Research in Applying Science to Crop Production in India, Government of India (1937), p. 57.

23 See W. Burns: Technological Possibilities of Agricultural Development in India (1944), p. 120.

which made good progress in the erstwhile Bombay State, benefiting an area of about 2 million acres. About 12 million acres of land were also surveyed under an integrated All-India Soil Conservation and Land Use Survey.

The Third Plan envisaged considerable expansion in soil conservation works. The planned outlay was Rs. 73 crores and the programmes include contour-bunding of 11 million acres and extension of dry farming techniques to about 22 million acres. In the past, soil conservation programme has been limited to erosion control measures in widely dispersed cultivated areas. The soil conservation programme in the Fourth Plan is however proposed to be taken up on complete watershed basis. A target of 20 million acres has been fixed in the draft Fourth Plan. The areas treated in each watershed will be preceded by necessary standard soil surveys. A master plan approach is formulated for this programme. During 1966-67, nearly 250 soil conservation schemes were taken up in different States. These schemes were expected to cover 3.7 million acres of agricultural land. During 1967-68, soil conservation programmes benefited over 3.3 million acres of agriculture and forest lands. Under the All-India Soil and Land Use Survey Scheme, an area of about 1.225 million acres was surveyed during 1966-67 and an additional area of about 1.5 million acres is expected to be surveyed during 1967-68. Besides, the Soil Conservation Research, Demonstration and Training Centres intensified work on field investigations and collection of basic data essential for supporting soil and watersheds.

MANURES AND FERTILIZERS

The problem of providing adequate quantities of suitable types of organic and inorganic manures has been subjected to much discussion in the last three-quarters of the century. As Voelcker emphasized, the problem is not ignorance or apathy on the part of the local cultivators but absence of cheap fuel, on the one hand, and the costliness of the manures and fertilizers, on the other. On the first aspect, careful planning is needed by the Forest Department which has to consider the practicability of planting quick growing trees near the villages. As to the

second aspect, the technical side of preparing suitable types of chemical fertilizers has been receiving attention from the Government experiment stations. The farmer has also to be provided with credit for the purchase of fertilizers and manures.

The type of fertility nutrients needed depends on the soil which varies widely in a country of the size of India. A systematic survey of Indian soils has not yet been carried out. However, soil experts are of the view that Indian soils are deficient in organic matter — nitrates and phosphates. Nitrogen is of primary importance in crop production. The low nitrogen status of Indian soil was recognised as early as in 1880 by Voelcker. The 30 years' observations of drainage experiments at Pusa showed that Indian soils might lose about 100 lbs. of nitrogen per acre per year through drainage and through crops, and the effect of growing crops was to reduce the loss of nitrogen through drainage.[24]

The development of local manurial resources both in urban and rural areas constitute an important activity under the agricultural production programme. Most State Governments have passed legislation making it obligatory on Municipalities and Notified Area Committees to dispose of night soils in the specified way. A steady improvement in the amount of urban compost prepared is noticeable. Under the scheme of Community Projects and National Extension Service Blocks, composting of farmyard manure and other waste materials is popularised. As compared to the production of 1.6 million tons of urban waste in 1951-52, its production was 2 million tons in 1955-56 and 3 million tons in 1960-61. As against a target of production of 5.1 million tons of urban compost in the Third Plan, the achievement is estimated at 3.4 million tons. The target of production of urban compost for 1970-71 has been fixed at 5.4 million tons. During 1966-67, about 3.7 million tons of urban compost were distributed. For proper and fuller utilisation of urban waste, two new schemes, *viz.*, mechanical sieves for serving compost and mechanical composting plants were sanctioned under the special development programme during the Third Plan period. In ad-

24 Indian Council of Agricultural Research: Silver Jubilee Souvenir, 1929-54 (1954), p. 60.

dition, sewage and sullage utilisation have been introduced in a number of towns. The total volume of rural compost was estimated to reach a level of 152 million tons by the end of the Third Plan as compared to 66 million tons at the end of the Second Plan. The achievement by the end of the Third Plan was 117 million tons. During 1966-67, production of rural compost was estimated at 122 million tons and during 1967-68, about 139 million tons of rural compost were expected to be produced.

Another most beneficial method by which soil can be conditioned is the growing of leguminous crops and burying them under the soil. The latter carry out the natural form of nitrogen fixation. The coverage under green manuring during 1965-66 was estimated at 19.85 million acres as against the target of 41 million acres in the Third Plan and as compared to about 12 million acres under green manuring at the end of the Second Five-Year Plan. The coverage under green manuring was estimated at 21 million acres during 1966-67. Evidently, though the value of green manure has been recognised, it has not still become a common practice even in areas where adequate rainfall or ample irrigation facilities are available. Regarding concentrated manure, the principal oilcakes available in the country are: groundnut, sesamum, linseed, cotton seed, castor, *mahua* and *neem*. They contain about 3 to 6 per cent nitrogen and 1 to 2 per cent phosphoric acid. As they are valuable as cattle feed, their availability as manure is limited. The by-products of slaughter houses which can be usefully conserved by the municipalities through proper tankage methods are horns, hoofs, bloodmeal, meat-meal, pieces of skin, rejected meat, etc. Bonemeal is a good form of phosphatic manure. About 1,50,000 tons of bones are collected annually, of which only about one-fourth is converted into bonemeal, and the rest is exported.

Chemical fertilizer is the spearhead of agricultural development. In fact, agricultural prosperity of countries can be measured on the scale of their fertilizer consumption. The use of chemical fertilizers has, of late, increased considerably. Production, imports and distribution of chemical fertilizers since 1952-53 are shown in Table IV.

TABLE IV

PRODUCTION, IMPORTS AND DISTRIBUTION OF CHEMICAL FERTILIZERS: 1952-67

(in thousand metric tons)

Year	Nitrogen (N)[1]			Phosphoric Acid (P_2O_5)[1]			Potash (K_2O)	
	Produced	Imported[2]	Distributed[3]	Produced	Imported	Distributed[4]	Imported	Distributed[5]
1952-53	53.0	44.3	57.8*	7.4	—	4.5	3.3	—
1953-54	52.9	19.3	89.3*	13.8	—	8.3	7.5	—
1954-55	68.5	20.0	94.8*	14.3	—	15.0	11.1	—
1955-56	76.9	53.4	107.5*	12.4	—	13.0	10.3	—
1956-57	78.8	56.8	123.0*	17.6	—	15.9	14.8	—
1957-58	81.1	110.1	149.0*	25.8	—	21.9	12.8	—
1958-59	80.8	97.5	172.0*	31.0	—	29.5	22.4	—
1959-60	83.7	142.3	229.3**	51.4	3.8	53.9	33.1	21.3
1960-61	112.0	172.0	211.7**	53.7	0.1	53.1	24.8	29.0
1961-62	154.3	142.9	291.5**	65.4	0.6	63.9	30.4	28.0
1962-63	194.2	229.5	360.0**	88.3	8.0	81.4	44.3	36.5
1963-64	219.1	197.7	407.0**	107.8	12.3	116.7	64.1	50.6
1964-65	243.2	256.5	434.5**	131.0	12.3	147.7	57.2	70.4
1965-66	237.9	376.3	547.4**	118.8	21.8	132.2	93.6	77.7
1966-67	309.0	574.6	838.7	145.7	129.2	248.6	143.3	115.7

Source: Fertilizer Statistics 1966-67, Fertilizer Association of India. New Delhi. 1967, p. 113.

Note:
1. Includes complex fertilizers which contain both N and P_2O_5.
2. Figures from 1952-53 to 1957-58 are on financial year (April-March) basis.
3. Figures from 1952-53 to 1956-57 relate to calendar years ending in the first half of the period stated while from 1957-58 to 1966-67, they are on financial year basis.
4. Figures from 1952-53 to 1957-58 relate to calendaryear ending in the first half of the period stated while from 1958-59 to 1966-67, they are on financial year basis.
5. Figures relate to financial year.

* Allotments of fertilizers under the "Central Fertiliser Pool."

** Constitute actual despatches of fertilizers made under the "Central Fertiliser Pool" and also those fertilizers which are outside the Pool.

The supplies, though increasing, are inadequate to meet the demand. The gap between supplies and requirements continues to be wide. For example, in regard to ammonium sulphate, "a comparison of the figures of requests for allotments and actual allotments out of the fertilizer pool would suggest that roughly only about one-half of the felt demand is being satisfied."[25] The domestic production of nitrogenous fertilizers was to increase during the Second Plan to 2,90,000 tons of nitrogen by 1960-61, while the actual production in that year amounted to 99 thousand tons of nitrogen. During the Third Plan also, supplies have lagged behind the requirements. For example, supplies were 2.8 lakh tons of nitrogen in 1961-62 as compared to 4 lakh tons of requirements and 3.5 lakh tons in 1962-63 as compared to the requirements of 5.3 lakh tons. A similar situation obtains with respect to supplies of phosphatic and potassic fertilizers. The supply of superphosphate in 1959-60 was only 2.4 lakh tons as compared to the minimum requirements estimated at 15 lakh tons. The Third Plan target is to increase the supply of phosphoric acid from 70,000 tons per year to 4 lakh tons per year. As against this target, the increase in the supplies of phosphoric acid was small, being only about 10,000 tons. Supplies of potassic fertilizers depended wholly on imports arranged for by the trade out of commercial allotments of foreign exchange. The actual consumption of nitrogenous, phosphatic and potassic fertilizers in 1964-65 was about 32 per cent, 51 per cent and 58 per cent less respectively than the figures assumed in the Third Plan. The reasons for this wide gap between requirements and supplies of fertilizers are to be found in the slow growth in domestic production as compared to targets of production, difficulties in importing adequate quantities of fertilizers owing to the paucity of foreign exchange and rapidly increasing demand due to intensive development programmes and extension efforts.

The level of fertilizer consumption per acre in India is only one-sixth of the world average, *viz.*, 2 kgs. per acre in 1965-66 as against 24 kgs. per acre in U.S.A., 83 kgs. per acre in the United Kingdom and 130 kgs. per acre in Japan in the same year.

25 Economic Survey of Indian Agriculture 1960-61, Ministry of Food and Agriculture, Government of India (1962), p. 27.

The total consumption at the end of the Third Plan is estimated at 0.54 million tons of nitrogen, 0.134 million tons of P_2O_5 and 0.078 million tons of K_2O. In the draft Fourth Plan, targets of 2 million tons of nitrogen, 1 million tons of P_2O_5 and 0.35 million tons of K_2O have been proposed. The intensive development programmes and adoption of high-yielding varieties require a large supply of fertilizers. It is estimated that about 1 million tons of N and 0.47 million tons of P_2O_5 would be needed to cope with the requirements of high-yielding varieties programme alone by the end of 1970-71. A major programme of action in the Fourth Plan would be acquisition through production and imports the targeted quantities of fertilizers and their timely distribution in appropriate areas supported by adequate research, extension work and institutional organisation for their most effective utilisation. Between 1966-67 and 1967-68, fertilizer consumption is estimated to have gone up from 0.84 million tons to 1.15 million tons of nitrogen, from 0.25 million tons to 0.4 million tons of P_2O_5 and from 0.116 million tons to 0.2 million tons of K_2O. Experience so far provided the assurance that there would be no dearth of demand for fertilizers from farmers but it is extremely doubtful whether it will be possible to arrange the supply of the targeted quantities unless the arrangements for speedy establishment of requisite number of factories with sufficient capacity to produce are made indigenously.

Chemical fertilizers yield optimum results when applied along with irrigation. It is also found that best results are secured when both organic and inorganic manures are used in combination. The line of advance therefore lies in fully conserving and utilising farmyard manure, on the one hand, and supplementing it by fertilizers in areas which are being brought under irrigation.

Both in the case of irrigation and of fertilizers, promotional pricing, involving subsidisation in the initial stages, is justifiable and necessary. Over a period, of course, these services have to pay their way. In view of the planned increase in the supply of chemical fertilizers, it will be a considerable administrative task to ensure efficient distribution of the available supplies. The Fertilizer Distribution Enquiry Committee has particularly empha-

sized the need for promoting the use of fertilizers in the form of mixtures for balanced fertilization and reduction in costs of distribution through improved arrangements in this respect. Particularly, the promotion of balanced fertilization requires extensive soil tests to determine the kinds and quantities of fertilizers needed for different crops under different conditions. This aspect of the problem is being studied by the Indian Council of Agricultural Research through model agronomic experiments on the various agro-climatic regions of the country.

AGRICULTURAL IMPLEMENTS

Most of Indian agriculture is non-mechanised and only the traditional implements are in general use. This is only another way of saying that enough capital is not invested in agriculture. More than 90 per cent of the ploughs in India are of the indigenous type and are not essentially different in shape and work capacity from what they were perhaps a thousand years ago. There is need for improved agricultural machinery suitable for Indian soil conditions and the use of bullock power.

Several State Governments have attempted to introduce improved ploughs. These efforts have met with very limited success. There is no one type of plough that will be suitable all over the country; nor is it easy to standardise a few types as the plough is locally made by the village artisan. It is difficult to introduce improved implements unless the size of the farm is large enough. The facilities at present available for the servicing and repairing of modern implements and tools are not satisfactory. The skill and techniques of the local blacksmiths and carpenters need to be improved by organising training courses and demonstrations.

Less than one per cent of the cultivated land in India uses any power-driven machinery. Increased financial assistance under the Grow More Food Campaign has accelerated the process of using improved implements, diesel engines, electrical motors, etc., for agricultural purposes. Mechanisation is often taken as meaning tractor cultivation, but if it is conceived as utilisation of power-driven machinery for various agricultural operations, there is a wide scope for it. Tractors have been useful in India only for reclamation work, eradication of deep-rooted weeds, in mak-

ing roads, bunds and channels, in anti-erosion work and on large estates where big areas have to be dealt with quickly and efficiently. The scope for tractor cultivation will remain limited unless some system of co-operative or joint cultivation is accepted.

Agricultural implements are classified according to the categories of work: (1) for preparing seed beds, (2) for cultivation operations, (3) for harvesting and threshing, (4) for processing and utilisation of agricultural produce and (5) for lifting water. Attention has been mostly devoted to improvement of the implements used for cultivation and for lifting water. There exists considerable scope for improving the efficiency of implements used for seed bed preparation and harvesting operations. The indigenous blade harrow has been improved scientifically so that the depth of operations can be controlled. A mechanical seed drill has been designed and used in a limited way in Peninsular India. Single row seed drills for jute and groundnuts have also been developed. The indigenous water-lift of the North has been completely replaced by a lift with links and buckets. Persian wheels have been used in the eastern and southern States. The indigenous *Mhote* or the single bullock water-lift of South India has been improved by using chains and buckets. Centrifugal pumps driven by engine or electrical power have become increasingly popular in Bombay, Uttar Pradesh, Madras and Mysore. In regard to improved machinery required for subsidiary occupations, extensive experiments have been conducted on improving the performance of rice mills. With a view to securing a higher turnover of unbroken and unpolished rice kernels, the Japanese type of rice hullers, both hand-operated and power-driven have been replaced by crushers with iron rollers. Barns for curing tobacco and cold storage arrangements for potatoes and oranges have been designed and built. The technological laboratory of the Indian Central Cotton Committee at Bombay has designed a hand-cum-power-driven table type cotton gin. For transport of agricultural produce, the bullock cart, however, remains as primitive as ever. In some parts of Uttar Pradesh, complete cart wheels made of steel have become popular. In a few organised farms, carts with rubber tyre wheels made of steel have become popular. In a few organised farms, carts with rubber tyre wheels are in use.

The data contained in Table V indicate that the use of improved implements and agricultural machinery has been growing in recent years.

TABLE V

USE OF IMPROVED IMPLEMENTS AND AGRICULTURAL MACHINERY IN INDIA: 1961

(*in thousand numbers*)

Item	1951	1956	1961
Ploughs			
(*a*) Wooden	31,796	36,142	38,324
(*b*) Iron	931	1,376	2,299
Carts	9,862	10,091	12,071
Sugarcane Crushers			
(*a*) Power-driven	21	23	33
(*b*) Bullock-driven	505	545	589
Oil Engines	82	122	230
Electric Pumps	26	47	160
Tractors (used for agricultural purposes only)	9	21	34
Persian Wheels	N.A.	N.A.	600

Source: India — A Reference Annual, 1962 and 1963, Government of India; and *Agricultural Situation in India*, Vol. XVII, No. 1, April, 1962.

Supply of Agricultural Machinery and Improved Implements[26]

The position in regard to supply of improved implements and agricultural machinery as at the end of the Third Plan and the provisions in this respect in the draft Fourth Plan are indicated below.

Improved Implements: The improved implements produced consist of field implements such as ploughs, seeding and planting equipment, hand tools such as spades, shovels and hoes, irrigation equipment such as Persian wheels and hand pumps, plant protection equipment such as sprayers and dusters and transport equipment such as wheel barrows and carts. At the end of the Second

26 Based on the material contained in Programmes of Industrial Development 1961-66, Planning Commission, Government of India (1962), pp. 207-227 and Fourth Five-Year Plan — A Draft Outline, *op. cit.*

Plan, there were 60 factories engaged in the manufacture of improved implements with a capacity of 30,900 tons in terms of steel. The actual production of improved implements increased from 13,875 tons of steel in 1955-56 to 17,400 tons in 1960-61. The value of imported implements for the corresponding period was Rs. 92.2 lakhs and Rs. 39 lakhs. Thus, there is some indication that imports are declining with growing domestic production of improved implements. According to a survey conducted by the Central Small Industries Organisation of the Ministry of Commerce, there were approximately 800 small-scale units in 1955 in the country which manufactured agricultural implements. The value of output of these units was estimated at Rs. 3.86 crores and it was further expected to increase to Rs. 7.71 crores by the end of the Second Plan. While the demand for improved implements is likely to rise in future, no estimates are available of the total requirements in this respect.

Power-Driven Pumps (Centrifugal): The domestic production of these pumps increased from 37,000 in 1955-56 to 1,05,000 in 1960-61. The domestic availability (domestic production + net imports) during the same period increased from 41,234 to 1,06,696 and was adequate to meet the estimated domestic demand for 86,000 pumps in 1960-61. The total number of pumps energised increased from 1.6 lakhs in 1960-61 to 4.8 lakhs at the end of the Third Plan. The proposed target for 1970-71 is 11.8 lakhs.

Diesel Engines: As against an annual production target of 21,000 diesel engines for the Second Plan, the annual production of these engines increased from 10,371 in 1955-56 to 43,215 in 1960-61. By the end of the Third Plan it is expected to reach 85,000. The target for 1970-71 is proposed to be 2 lakhs.

Agricultural Tractors: Owing to the restrictive import policy followed during the Second Plan due to foreign exchange difficulties, the domestic demand for tractors could not be fully met during this period. For example, only 3,843 tractors could be imported during the year 1960-61 as against the estimated demand of 5,000 tractors for that year. During the Third Plan, licences have been granted to five units for domestic production of tractors

with a capacity of 12,000 tractors. The domestic production of tractors by the end of Third Plan is estimated to be 5,600. A target of 35,000 tractors is proposed in the draft Fourth Plan. Production of tractors is expected to go up from 7,520 units during 1966 to 13,000 units during 1967 as against the estimated requirements of 25,000 tractors. Wheeled tractors between 20 and 50 H.P. ranges are being manufactured by five manufacturing units with an installed capacity of 30,000 units per year against a demand of 40,000 by 1970-71. One unit in the public sector and two units in the private sector with a total capacity of over 1,100 crawler tractors in different H.P. ranges are proposed. It is envisaged that by the end of 1970-71 the demand would be largely met from indigenous sources. The expansion in the production of agricultural machinery planned by 1970-71 is indicated in Table VI.

TABLE VI

PRODUCTION OF AGRICULTURAL MACHINERY

(in thousand numbers)

Type of agricultural machinery	1960-61 (actual)	1965-66 (estimated)	1970-71 (planned)
Power-driven Pumps			
Capacity	128	200	400
Production	105	200	400
Diesel Engines			
Capacity	47.68	100.00	200.00
Production	43.21	85.00	200.00
Agricultural Tractors			
Capacity	—	15.00	40.00
Production	—	5.60	35.00

Source: Fourth Five-Year Plan — A Draft Outline, *op cit.*, p. 291.

From the above it is clear that the programme for improved agricultural implements has seriously lagged behind in the first three Plans. The Committee on Plan Projects set up an Agricultural Team in 1962 to undertake the study of improved agricultural implements and machinery in India. The Team has

observed that the existing arrangements for research, manufacture, distribution, extension and training in respect of agricultural implements are far from satisfactory. It is largely due to shortage of iron and steel, lack of suitable designs of implements, high cost of manufacture, lack of adequate and timely credit at reasonable rates to farmers for purchase of implements, lack of repair and maintenance facilities, difficulty in obtaining spare parts and lack of competent extension machinery to demonstrate the effectiveness of improved implements. The Team has emphasized the programme of research, extension and training pertaining to agricultural implements and made recommendations in regard to the administrative set up and co-ordination, selection of implements, supply of raw materials, training, extension and popularisation. Accordingly, in the draft Fourth Plan it is proposed to set up in each block a workshop under the charge of a farm mechanic to repair, maintain and popularise agricultural implements in collaboration with the village level workers and to give necessary guidance to village artisans and farmers. For accelerating development of agriculture by ensuring prompt and adequate supply of inputs like farm machinery, improved implements and other basic inputs and for promoting agro-industrial activities, Agro-Industries Corporations have been set up in ten States. These Corporations have proposed to take measures for supplying agricultural machinery and implements, tractors, pump-sets, etc., to farmers either on cash or on hire-purchase terms. In several parts of the country, progressive farmers are adopting improved implements on an increasing scale. Their experience and example could assist in popularising the use of improved implements. To facilitate this, agriculture and co-operative departments should provide effective extension arrangements, training, credit and repair services.

CULTURAL PRACTICES

India has a long tradition of sound cultural practices, but there has been a gradual deterioration from the former standards of rotation of crops. This is because of lack of proper technical advice. The prospect of immediate gains from commercial crops has often led to indiscriminate departures from the most suitable rotation of crops. The existing practices require

improvement in several directions. Introduction and popularisation of scientific practices in land utilisation and cropping should be an important function of the National Extension Service. There is, for example, the Japanese method of rice cultivation. The method, it has been demonstrated, improves the yield of rice substantially. In 1953, about 2,80,000 acres were covered under the Japanese method while a partial use of the method was tried on another 3 million acres. In 1959-60, the area under this improved practice increased to 7.2 million acres.[27] The additional yield per acre reported was 38 maunds in Madhya Pradesh, 21.6 maunds in Kerala and 19 maunds in West Bengal. There was a record produce of 63 maunds and 30 seers of paddy at Sultanpur village about 50 miles from Bhopal. The average yield of paddy per acre in this region under the indigenous method of cultivation is between 8 to 10 maunds. In Maharashtra, considerable progress has been made with 2.5 lakh acres under the new method with a record output of 1,500 lbs. per acre. In addition, in 1960-61 an area of over 1.1 lakh acres has been covered under partial Japanese method in this State.[28] The propagation of the new method has been encouraged by starting centres for training farmers and setting up demonstration plots on cultivators' fields and Government farms, by a reduction in the price of fertilizers, distribution of improved seeds and provision of increased credit facilities, etc. In this, as in other fields of crop improvement, research, demonstration and work on the field have to move together.

INTENSIVE AGRICULTURAL PROGRAMMES

Intensive Agricultural District Programme[29]

An intensive agricultural development project known as Intensive Agricultural District Programme (I.A.D.P.) ("Package

27 *Agricultural Situation in India*, Vol. XVI, No. 5, August (Annual Number), 1961, p. 497

28 Annual Administration Report 1960-61, Department of Agriculture, Maharashtra State (1962), p. 78.

29 Based on the Expert Committee on Assessment and Evaluation of the Intensive Agricultural District Programme, Second Report (1960-65) and Third Report on Intensive Agricultural District Programme, 1965-66 and 1966-67, Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture), Government of India (1966 and 1967).

Programme") has been formulated on the lines of the recommendations of the Ford Foundation Team.[30] The objective of the programme is to demonstrate the potentialities of increase in food production through a multi-pronged concentrated and co-ordinated approach to agricultural development in areas which can quickly respond to such production efforts. Two salient features of the programme are (i) development of a "package" of improved agricultural practices for each important crop based on the latest research findings and (ii) assistance to the cultivators to develop farm production plans which provide information on the required quantity of each input on individual holdings and the amount of credit necessary to acquire these inputs. The districts selected for this programme were to be those with a maximum of irrigation facilities and a minimum of natural hazards. The programme was established in two stages: in 7 districts beginning nominally in 1960-61 but really in 1961-62 and in 8 districts beginning in 1962-63. In 1966-67 the programme comprised a total number of 308 Development Blocks in 15 districts (one in each State except in Kerala where two districts have been taken up). During 1967-68, the programme was extended to include Karnal district in Haryana. In addition, the programme is in operation in the two Union Territories of Delhi and Himachal Pradesh. The programme covers 27,850 villages and a total gross cropped area of 20 million acres, forming a little over 5 per cent of the total cultivated area of the country.

The pace of actual coverage which was somewhat slow up to the end of 1962-63, gathered momentum in 1963-64 and 1964-65 and the programme covered all the blocks in the first seven districts. In all the districts (old and new) taken together, nearly 1.5 million cultivating families, belonging to about 24,336 villages drawn from 290 blocks participated in the programme in 1966-67 as against 1.13 million in 1964-65 and 1.29 million in 1965-66. The cropped area covered under farm plans during 1966-67 was about 7.4 million acres as against 6.3 million acres in 1964-65. In all, nearly 50 per cent of the cultivating families

30 Report on India's Food Crisis and Steps to Meet It, Agricultural Production Team Sponsored by the Ford Foundation, Government of India (1959), p. 5.

and 39.1 per cent of the gross cropped area in these districts are drawn into the fold of the programme in 1966-67.

Farm plan, as an educative process and a practical expedient for stimulating the use of improved methods of cultivation, has been used on a wider scale in these districts. Initially, the concept of comprehensive farm planning proved too complicated for the average Indian farmer. Later, only when simple farm plans were substituted for the complicated did they become popular with the farmers. The number of farm plans prepared has increased from 55,000 in 1960-61 to 1.49 million in 1966-67. In order to achieve speedy development in the package areas, factor inputs specially improved seeds, fertilizers and pesticides have been intensified both in terms of quantity and quality. A total area of about 1.9 million acres was covered by improved seeds of major crops during 1964-65 as against 0.66 million acres in 1961-62. The quantity of improved seed distributed in 1964-65 was 25,009 tons. During 1966-67 a record quantity of 47,045 tons of improved seeds was distributed. Introduction of High-Yielding Varieties Programme is bound to give a strong fillip to the improved seed programme in the I.A.D.P. districts. As regard fertilizers, "remarkable achievement" has taken place both in terms of total consumption as well as in the rate of actual application per acre. The quantity of fertilizers distributed per block increased from 540 tons in 1960-61 to 2,130 tons during 1964-65 for the first group of I.A.D.P. districts. In terms of consumption, offtake of nitrogenous fertilizers (in terms of ammonium sulphate) rose from 0.93 lakh tons in the pre-package period to 4.11 lakh tons during 1966-67 — an increase of 342 per cent during a short period of 5 to 6 years. Similarly, there is a marked increase in the offtake of phosphatic fertilizers in these districts — from 0.22 lakh tons to 1.55 lakh tons in 1964-65 (an increase of over 500 per cent). However, in 1966-67 the offtake of phosphatic fertilizers decreased to 1.17 lakh tons. The application of nitrogenous fertilizers which was around 55.5 kgs. increased to 67.6 kgs. per acre in 1963-64. The rate of application of phosphatic fertilizers also similarly increased from 38.5 kgs. per acre in 1962-63 to 40.5 kgs. in 1963-64. In addition to the use of inorganic manures, emphasis has also been laid on the

development of local manurial resources, such as green manuring and rural compost. In the field of plant protection, an area of 3.71 million acres was covered under various measures of plant protection in 1966-67 as against 0.78 million acres in 1961-62. A comprehensive programme of scientific demonstrations on cultivators' fields for propagating the "package of practices" is being implemented in the selected districts. During 1965-66, about 26,874 demonstrations were laid out on various crops as against 12,600 during 1961-62. An implements workshop has been established in each package district in order to give fillip to the production, popularisation and demonstration of improved implements suited to the region. Steps are being taken to rationalise and render more effective the working of co-operative institutions at all levels. There has been considerable increase in the membership and paid-up capital of co-operatives in all these districts. The total membership of primary societies in all the I.A.D.P. districts taken together increased by 0.58 million from 1.53 million in 1961-62 to 2.11 million in 1966-67. The volume of short-term loans advanced by primary co-operative societies on the basis of farm plans rose to Rs. 24.04 crores in 1966-67 from Rs. 15.27 crores in 1961-62. To ensure more productive credit use, short-term loans are being advanced as far as possible in kind rather than in cash and efforts are being made to observe more strictly seasonality in credit operations corresponding to the cropping pattern of the region.

In all the I.A.D.P. districts, appreciable increases were achieved in the yields of crops included under the programme during 1964-65 as compared to 1960-61. The average yield rates of rice recorded an increase of 23.1 per cent in Tanjore, 50.9 per cent in Shahabad, 52.4 per cent in Mandya and 35 per cent in Burdwan during 1964-65 as compared to 1960-61. However, in 1965-66 and 1966-67, as a result of widespread natural calamities there was a general decline in the level of crop yields in most of the districts.

The programme has now built up sufficient tempo and is thus entering the "impact" stage. The Expert Committee on Assessment and Evaluation of the Intensive Agricultural District Pro-

gramme has indicated a number of weaknesses inhibiting the pace of progress under this programme. It refers to the failure of the industrial sector to supply the needed inputs for agricultural production, the need for gearing of the administrative system and improving the Government's basic policies particularly regarding credit, marketing and prices. The I.A.D.P. experience has, however, established beyond doubt that the Indian farmer in spite of his illiteracy and poverty, is fairly prompt to accept innovations that are useful and within his means, provided he is convinced through extension efforts, specially through demonstration. On the whole, under conditions of factor scarcity, it seems reasonable to direct resources into those areas which hold out promises of a high response, through the combination of natural factors. Intensive agricultural districts provide the necessary facilities for raising the technical level of agriculture and experience gained in work in these districts is expected to provide "path-finder" and "pace-setter" demonstration to the neighbouring areas. This has been underscored by the Government's decision to expand the package concept to more than 100 districts in what is known as Intensive Agricultural Areas Programme (I.A.A.P.).

Intensive Agricultural Areas Programme

Based on the I.A.D.P. experience, Intensive Agricultural Areas Programme (I.A.A.P.) with main emphasis on increasing production of some of the major crops like paddy, wheat and millets was initiated in selected potential areas from the beginning of 1964-65. It follows the "package" approach but in slightly diluted form with lesser facilities. In the selection of the districts, the approach is not in terms of a single crop only, but rather in terms of intensive agricultural development of the selected areas. During 1964-65, this programme was implemented in 1,084 blocks of 114 selected districts in the country. The total number of blocks has been increased to 1,285 during 1965-66 in these districts. It is expected that the number of blocks implementing the programme would increase to 1,568 during 1966-67. In terms of cultivated area, the programme covered over 25.89 million acres during the year 1964-65 and over 32.86

million acres during 1965-66. This is likely to go up to 37.8 million acres in 1966-67.

Unlike the I.A.D.P. districts, the number of I.A.A.P. districts is quite large, accounting for nearly 7 per cent of the total cultivated area of the country. Large quantities of fertilizers are hence needed to meet the growing demand of such a vast area. The offtake of nitrogenous fertilizers during 1965-66 is estimated to amount 3.5 lakh tons. The requirements of nitrogenous fertilizers during 1966-67 in the I.A.A.P. districts are estimated at 4.4 lakh tons of nitrogen. In view of fertilizer shortages, greater reliance is being placed on the intensification of the programme of compost making, green manuring, and utilisation of urban waste and sewage and sullage. Significant advances also have been made in these districts in the use of improved seeds and adoption of plant protection measures.

PROGRESS OF TECHNICAL RESEARCH

The formulation of a comprehensive and phased programme of improvement on the lines indicated will have to be based on the progress that has been so far made in technical research in agriculture in this country. There are three distinct stages in such progress: (*a*) acquisition of scientific knowledge by specialised research and study; (*b*) application of the knowledge on experimental farms and stations under conditions approximating to those found in rural life; and (*c*) extension of results thus obtained to the agriculturists who are the real beneficiaries concerned and who must therefore be convinced as to the desirability as well as the practicability of the improvements suggested.

For the acquisition and development of scientific knowledge, the best media are the Universities and the Technical Institutes. The number of agricultural colleges and institutions in India has been small, and very little of agriculture or agricultural economics is covered in the Arts courses or the Science courses in the Universities. It is only in the course of the last few years that the agricultural colleges and the post-graduate institutes for economic research have directed their efforts towards an intensification of their courses and an improvement of their facilities for

research.[31] In recent years, under the Technical Assistance and other programmes of the international organisations, Indian scholars and administrators have been sent abroad to study conditions in other countries. Our own scholars have transcended the limitations of the educational system under which they grew up and have ventured into higher technical and scientific research, often with remarkable success.

Some of the agricultural institutes in the country have been carrying on research work in the applied branches of modern science bearing on different aspects of agriculture. Recently, the scope of activities of these institutes has been extended and new institutes have also been established for the purpose of developing the technical side of research. Professors Black and Stewart, after a review of the position of agricultural education in India, observe that an emphasis on 'practical work' in the Indian agricultural colleges is highly desirable under Indian conditions. They also lay great stress on post-graduate education and research, including agricultural economics, as in the carrying forward of the Five-Year Plans, there will be need for a rapidly growing number of men who are specialised in a very practical down-to-earth research to carry out programmes in particular areas and situations.[32] India has to catch up with the progress in other countries and to make up a great deal in the application of scientific results to the field.

Organisation of Research

The Indian Agricultural Research Institute, now located at New Delhi, was originally established by the Government of India in 1905 at Pusa in Bihar. The Institute occupies a position of all-India importance; its function is to provide a scientific basis for the activities of the various Departments of Agriculture in the States and to undertake work of such wide application as must be done at one centre so as to serve the

31 See in this context, J. D. Black and H. L. Stewart: Report on the Research, Teaching and Public Administration of the Economics of Agriculture for India (1954).

The Joint Indo-American Team on Agricultural Research and Education (1955) has investigated the position and recommended in their report, the sponsoring of Rural Institutes.

32 *op. cit.*, pp. 106 and 111.

entire country. The work of the Institute falls into three divisions: (1) standardisation of methods for the use of other stations, (2) making collections of insects, fungi, soils, etc., and also a register of varieties of crops, all these to be made available to the staff of State Departments, and (3) investigation of agricultural scientific problems which seem to be near to practical application. The Institute has the following divisions under it: agronomy, botany, entomology, mycology and plant pathology, soil science and agricultural chemistry, agricultural engineering, horticulture, agricultural extension, agricultural economics, plant introduction, microbiology and agricultural physics. In 1958, the All-India Soil and Land Use Survey started functioning as a separate unit of the Institute. The Institute has under its control a total of 11 sub-stations located all over the country, in addition to the 24 regional soil testing laboratories and the centres and sub-centres set up in the country under the Co-ordinated Maize Breeding Scheme.[33] Besides its regular programme of research, the various Divisions of the Institute have undertaken a number of research projects financed either by the Ministry of Food and Agriculture or by the Indian Council of Agricultural Research. In recent years, the Institute has been entrusted with the co-ordination of research projects on regional basis. Post-graduate training constitutes an important part of its activities. Besides short-term and refresher courses, it provides regular 2-year courses in major disciplines of agricultural science.

The Institute works in close co-operation with the Indian Council of Agricultural Research. The problems that should be of major concern are the impediments encountered by the cultivator in obtaining maximum agricultural production, and in increasing efficiency of production. Some of the restrictions in production are of immediate concern, such as losses incurred through pests, diseases, or inadequate fertilizers, whereas others are of long range consequence, such as gradual deterioration of soils and land through erosion or water-logging. The problem has to be identified and properly diagnosed at the level at which it occurs. In the course of the development of this Institute, the

33 Annual Scientific Reports of the Indian Agricultural Research Institute for the year 1964, Government of India (1967), p. 1.

expansion of research in some crops has resulted in the establishment of new institutes. The foundations of research in cotton, silk, lac, tobacco, potato and sugarcane in India were first laid by this Institute which nursed the research activities in these subjects till they were later taken over, each by a separate research organisation.

The Indian Council of Agricultural Research (ICAR) is a central body, whose primary objective is the promotion, guidance and co-ordination of agricultural and animal husbandry education and research throughout India. It finances approved research work carried out in Government Institutes belonging to the Centre and the States, in Universities and also in recognised private institutions. As a general rule, the Council does not itself undertake investigation. There are, however, two directions in which it has done so: (i) costs of production of crops, especially of cotton and sugarcane; and (ii) the statistical control of agricultural experiments. Several schemes of the Council's work are carried on through the various special institutes established for the purpose. Pioneering work extending over a wide range has been accomplished and a stage is now reached when a reorientation of the Council's activities is needed to promote fuller use of existing knowledge through work on the cultivator's field rather than in the laboratory.

The Joint Indo-American Team on Agricultural Research and Education, which was appointed by the Government of India in 1954, made a number of valuable recommendations for improvement of agricultural research and education in the country.[34] The Team recognised the need for expansion of research not only for strengthening the research schemes in operation but also for initiating research in neglected fields. It stressed the need for continued support of agricultural research by the States and for expansion of State facilities to be used by the personnel both in the Centre and the States. It recommended the establishment of ICAR as the Technical arm of the Ministry of Food and Agriculture for the co-ordination of all research and related activities

34 Report of the Joint Indo-American Team on Agricultural Research and Education, Ministry of Food and Agriculture, Government of India, Indian Council of Agricultural Research (1955), pp. 27-28.

supported by Central funds. It was recommended that the Central research institutes and Commodity Committees should be under the control and administration of the ICAR.

The recommendations of the first Joint Indo-American Team were accepted in principle by the Government of India, but only a few of them have been implemented by the Central and State Governments. The Second Joint Indo-American Team (1959)[35] which reviewed the progress of work done in this sphere reported that little progress could be documented on most of the recommendations made by the First Team. There was, however, an increasing awareness for the need to gear the agricultural research programme to the major problem of larger agricultural production. The Second Team emphasized the need to implement fully the recommendations made by the First Team. In addition, the Second Team recommended the formation of an Agricultural Research Policy Council to identify major problems in agricultural research policy, to establish priorities and to determine means of implementing a research programme geared to solve these problems. With the establishment of this high level body, it recommended the abolition of the Board of Research. At the State level, all of the agricultural research programmes should be co-ordinated by setting up strong State Research Boards. It recommended that gaps in coverage of agricultural research by current programmes should be given particular scrutiny with a view to bridging them.

In the context of the Fourth Five-Year Plan wherein the High-Yielding Varieties Programme is the major plank of the policy for achieving self-sufficiency in foodgrains, research has to form the backbone of development of agriculture on scientific lines. Realising the deficiencies in the existing research set-up, the Government of India decided to reorganise the ICAR to enable it to develop and administer a national programme of agricultural research and education commensurate with the country's requirements. Accordingly, in 1965, the ICAR has been reorganised into a technically competent and fully autono-

35 Report of the Second Joint Indo-American Team on Agricultural Education, Research and Extension, Ministry of Food and Agriculture, Government of India, Indian Council of Agricultural Research (1960), pp. 26-40.

mous body charged with the responsibility of co-ordinating and directing agricultural research and education in the whole country. All agricultural research stations have been centralised under the control of this body and placed under the charge of a senior agricultural scientist. Encouraged by the achievements of the All-India Co-ordinated Maize Research Programme initiated in the year 1957, the ICAR decided to formulate such all-India co-ordinated projects in respect of all the major food and commercial crops. Committees of experts were constituted to formulate All-India Co-ordinated Projects cropwise and disciplinewise. In the field of agricultural sciences, 35 such All-India Co-ordinated Projects have been drawn up. An allocation of Rs. 21.88 crores has been made for these projects in the draft Fourth Plan. All the agricultural research work right up to the district had been centralised under the control of this body. The three major Institutes in the field of agriculture and animal sciences, *viz.*, Indian Agricultural Research Institute, New Delhi, Indian Veterinary Research Institute, Izatnagar, and the National Dairy Research Institute, Karnal, are being designated as Institutes of national importance. A new Institute of Horticulture at Hassarghatta in Mysore State and two Virus Research Institutes at Poona in Maharashtra (one for animal virus and the other for plant virus) have been established. Functions of the existing Central Research Institutes and Research Institutes at States and lower levels are being streamlined. The Commodity Committees have been abolished and the research work dealt with by them has been centralised under the control of the ICAR. The Education Commission appointed by the Government of India has recommended the establishment of one Agricultural University in every State during the period 1966-71. The Commission has also recommended the establishment of Agricultural Polytechnics in some States. There are now eight Agricultural Universities in the country. The Indian Council of Agricultural Research has already appointed a Committee to study the recommendations of the Education Commission with a view to implementing them as early as possible.

Thus the Council is reorienting its activities in these lines. Its activities are not limited only to research projects, but include

extension and development. It also undertakes training of students in agriculture and animal husbandry statistics. In order to disseminate the results of research, the Council publishes a number of journals, monographs, bulletins, pamphlets, etc., which range from purely technical communications useful only to trained research workers to non-technical ones written in popular language for the benefit of the layman. The Royal Commission on Agriculture (1928) had hoped that "through the proposed Council of Agricultural Research it would be possible to develop satisfactorily agricultural research in India, to secure a continuity of policy and to ensure a programme of ordered advance in the domain of agricultural research." The Council has now an impressive record of progress to its credit; it has established itself as the Central agricultural organisation which guides, finances and co-ordinates research problems connected with agriculture and animal husbandry in the widest sense of the term.

AGRICULTURAL EXTENSION

The final stage in crop improvement is the extension of the results of research to the cultivator. This is the greatest need of the moment, for agricultural techniques and methods in this country have remained stationary for generations past. Some excellent results by way of better yields have been obtained at the various laboratories and research stations but all these are of little avail unless this knowledge is applied to the actual fields and farms where the cultivator works.

The ICAR, on the recommendation of the Russell Report undertook an examination of the methods of demonstration and propaganda in use and put forward the project method, the main idea of which is to put across a whole group of tested improvements simultaneously and to observe the combined effect of all these on the cultivator's income and on the land.[36] This method implies the use of improved seeds, scientific methods of cultivation, manuring, irrigation, drainage, preventive and curative measures against pest and diseases, improvement of livestock, methods of marketing, etc. The demonstration method previously adopted was usually confined to one particular item of develop-

36 *Indian Farming*, March, 1941.

ment and was carried out by the Government departmental staff, whereas the project method incorporates all the items of development into a single scheme and has to be worked out by the cultivator himself under official guidance and supervision. This is the basic idea underlying the programme for Community Development and National Extension Service, an account of which is given in a later chapter.

Organisation for Extension

The success of programmes for agricultural extension depends on the adequacy and efficiency of the organisation entrusted with these programmes. This implies effective contact between the agriculturist and the extension worker and active and viable group organisations of agriculturists such as co-operative societies to bring about steady improvement in techniques and practices. From both these points of view, the extension organisation in India shows certain deficiencies which need to be noted.

Regarding extension workers, the actual number of workers continues to be small in relation to many categories of workers. According to the Mid-term Appraisal of the Third Plan, in March 1963, there were shortages ranging from 26 per cent to 30 per cent of the requirements among women village level workers, social education organisers and progress assistants and from 5 per cent to 6 per cent among agricultural and co-operation officers and village level workers. The effect of such shortages are sometimes further accentuated by transfers of personnel at short intervals. The aptitude of the personnel for extension work also needs to bo improved through adequate initial and in-service training.

The First and the Second Joint Indo-American Team[37] recommended that the organisation of agriculture and community development should be streamlined from the Central Government down to the village levels. It was recommended that research, education and extension agencies should not be involved in rendering of agricultural services such as the distribution of im-

37 *Vide* Report of the Second Joint Indo-American Team on Agricultural Education, Research and Extension, *op. cit.*, pp. 50-51.

proved seed, fertilizers, or similar activities of a service nature. The extension programme should be built around stated objectives and goals within the national policy and based upon the needs of rural people. It should originate at the farm home, utilising research and scientific information to attain desired results. Agricultural extension work can be effective only when it is linked to research and education. Teaching institutions in agriculture are now endeavouring to integrate their activities in accordance with this principle. The ultimate objective should be to unify research, education and extension activities of agricultural and veterinary colleges and rural universities in association with the State Departments, with a view to promoting free flow of technical advice and guidance.

CHAPTER VI

ANIMAL HUSBANDRY

The basic facts on animal husbandry including dairying are presented in Chapter I. In this chapter only the salient features about animal husbandry are described to provide the background for discussion. The role of animal husbandry in an economy may be assessed in terms of its contribution to production of goods and services. In some advanced countries like the U.S.A., for instance, the livestock products account for over 50 per cent of the total farm products, while in the U.K., its contribution is as high as 70 per cent of the total agricultural income. Australia depends for about one-half of the income on wool, and for about one-third on meat and dairy products. The total value of livestock products and services in India was estimated by Wright in 1937 at roughly Rs. 1,010 crores.[1] It included, among others, the value of dairy products and labour of bullocks in agriculture but excluded the potential value of cattle as a means of increasing the fertility of the soil. The national Income Committee estimated the contribution of livestock exclusive of labour value of bullocks for 1950-51 at Rs. 664 crores which represents about 16 per cent of the total income from agriculture. According to the revised estimates of the National Income Unit of the Central Statistical Organisation, the income from animal husbandry at 1958-59 prices, amounted to Rs. 850 crores for the year 1959-60, forming about 14 per cent of the total agricultural income. As against returns from animal husbandry, investment and expenditure aspects may be noted. According to the Fifteenth Round of the National Sample Survey, about 40 per cent of the total investment in rural areas in all goods is devoted to the livestock production and maintenance.[2] On an average, in rural areas

1 N. C. Wright: Report on the Development of the Cattle and Dairy Industries of India (1937), pp. 58-59.

2 The National Sample Survey: Fifteenth Round (Rural): July 1959 — June 1960, Number 97 — Tables with Notes on Capital Formation, Cabinet Secretariat, Government of India (1965), p. 4.

annual cost of maintenance of feed per cattle and per buffalo is estimated to be Rs. 190.8 and Rs. 223.6 respectively.[3]

A relatively low contribution of animal husbandry to national income in India is due to the poor quality of animals. For example, average milk yield of a cow in India comes to only 413 lbs. (187 kilograms) per lactation (the lowest in any country in the world) as against 3,000 to 5,000 lbs. in the U.S.A. and the U. K., 6,000 lbs. in Sweden and about 7,000 lbs. in Australia. The buffalo yields on an average 1,101 lbs. (500 kilograms).[4] The average yield of wool per sheep in India comes to 2.4 lbs., as compared to 9 lbs. in Australia, 8.4 lbs. in the U.S.A. and 4.1 lbs. in the U.K. The poor performance of the animals in India may be attributed, among others, to inadequate feeding, defective breeding and irrational management of other animal husbandry practices. Apart from the fact that the livestock population is larger than what could be supported with available fodder resources, about 10 per cent of this population is considered to be unserviceable or unproductive. The development plans of India have emphasized the necessity of livestock improvement and Rs. 16 crores and Rs. 33 crores were allotted during the First and Second Plan periods respectively, to the advancement of animal husbandry (including dairying). In the Third Plan a sum of Rs. 80 crores was spent and in the Draft Outline of the Fourth Plan, it is proposed to spend Rs. 201 crores for this purpose.

The animal husbandry programmes, however, continue to encounter serious practical difficulties. Before solutions for them can be found, it is necessary that the size and the nature of the problem and its essential features should be widely understood.

3 The National Sample Survey: Eleventh Round: August 1956—January 1957, Number 65—Tables with Notes on Animal Husbandry, Cabinet Secretariat, Government of India (1962).

4 In the Military Dairy Farms in India striking results have been achieved in increasing the milk yield of cows by cross-breeding of Indian animals with imported European bulls. From the mean average yield of 3,247 pounds in pure Indian the yield rose to 6,859 pounds in the half-bred. The average number of days in milk also increased from 273 days to 324 days as a result of this cross-breeding.

Livestock economy, livestock production and animal husbandry are generally used as synonyms. Animal husbandry in its wider connotation includes what man does for the animals and what the animals do in turn for man. In its general use, animal husbandry may connote the art and science of breeding, feeding and caring for farm animals so that they may be healthy, productive, reproductive and useful to man. This definition covers numerous species like cattle, buffaloes and other livestock and poultry. However, animal husbandry for all practical purposes relates to livestock, chiefly bovine population. Poultry farming and fisheries may be treated to a certain extent differently as they cover only the small animals.

India has about 25 breeds of cattle and 7 breeds of buffaloes. As early as 1938, Col. A. Olver classified the cattle breeds into six groups mainly on the basis of the shape of horns and the location of breeds. Again in 1953, another classification[5] was done more or less on the same lines. The Livestock Census of India, 1951 also enumerated these and other breeds of livestock. Cattle breeds have been recently classified in accordance with their utility.[6] These breeds are divided into two groups, *viz.*, milch breeds and general utility breeds. The milch breeds are Sahiwal, Sindhi, Gir and Deoni, while the general utility breeds are Nimari, Dangi, Hariana, Mewati, Rath, Ongole, Gaolao, Krishna Valley, Tharparkar and Kankrej. It may be noted that this list is not exhaustive. The buffalo breeds are Murrah, Bhadawari, Jaffarabadi, Surti, Mehsana, Nagpuri and Nili.

According to the Livestock Census of India, 1961, there were 336 million farm animals. Of these, cattle numbered about 176 million and buffaloes about 51 million, constituting together a fourth of the world's bovine population. There were, in addition, 40 million sheep, 60 million goats, 8.6 million other livestock and 116 million poultry.

The rate of increase of livestock population over the last decade (1951-61) works out at 1.5 per cent per annum. This rate was higher during the quinquennium 1956-61, being about

5 F.A.O.: Zebu Cattle of India and Pakistan (1953).

6 First Indian Dairy Year Book, 1961, pp. 3-11.

2 per cent per annum. The quinquennial rate of increase of sheep and goats is 2.6 per cent and 9.8 per cent respectively. The number of horse and ponies has increased by about 9 per cent, while the other animals have increased by about 7 per cent during the same quinquennium. There is as much as 23.5 per cent increase in the number of poultry.

The rate of increase in the bovine population during the last decade is given in Table I.

TABLE I

VARIATION IN THE NUMBER OF BOVINE ANIMALS DURING THE DECADE 1951-61

Kind	1951	1956	1961	Percentage variation (+ or —) in 1961 over 1951	Percentage variation (+ or —) in 1961 over 1956
	(in million)				
Cattle					
Males over 3 years	61.80	64.86	72.47	18.3	11.7
Females over 3 years	49.87	49.89	54.32	8.9	8.8
Young stock	43.56	43.80	48.87	12.2	11.6
Total	155.23	158.55	175.66	13.1	10.7
Buffaloes					
Males over 3 years	6.79	6.50	7.66	12.6	17.7
Females over 3 years	21.85	22.33	25.02	14.6	12.1
Young stock	14.75	16.07	18.45	25.1	14.8
Total	43.39	44.90	51.13	17.8	13.9
Total bovine	198.62	203.45	226.79	14.2	11.9
Percentage of bovine population to total livestock	67.8	67.0	67.4	—	—

Source: *Agricultural Situation in India*, Vol. XVII, No. 1, April, 1962, pp. 121-122 (See All-India Ninth Census of Livestock, Poultry and Tractors).

Bovine population constitutes more than 67 per cent of the total livestock. The livestock economy of India is therefore characterised largely by the functions of bovine animals. Cattle form 77 per cent of the total bovine animals and the rest is represented by buffaloes. It is, however, observed that the rate of increase of buffaloes over the decade (1951-61) is higher (17.8 per cent) than that of cattle (13 per cent). Breeding of buffaloes for dairying is becoming more popular than that of cattle. There was an increase of 14.6 per cent in respect of buffaloes in milk as against 8.9 per cent increase in the number of milch cows in 1961 as compared to 1951. Of the cattle over 3 years, the percentage of males was 57 and that of females 43. The reverse is the position in the case of buffaloes over 3 years. For example, the female buffaloes account for as high as 80 per cent of the total. Over the last decade 1951-61, cows in milk have increased by 7 per cent while buffaloes in milk rose by 23 per cent. In respect of draft animals, there has been an increase of 16.4 per cent in the case of working bullocks in 1961 as compared to 1951, whereas the corresponding figure is 8 per cent for working buffaloes. Of the total working animals (draft), about 91 per cent are cattle and the rest are buffaloes. It is therefore obvious that the draught power in India consists mainly of bullocks. The use of cows and buffaloes for draft purposes is very insignificant.

LIVESTOCK IN FARM ECONOMY

The role of animal husbandry may be better appreciated from the point of view of its economic contribution to the national economy and farm economy in particular. Farm animals enhance the productivity of land and people by providing nutritive food, draught power, farmyard manure and some leather and glandular products. Balanced diet raises efficiency of manpower and prolongs productive life. This diet includes, among others, milk and milk products, meat and eggs which have high nutritive value. The availability of nutritive articles for consumption in different countries is given in Table II.

Consumption of highly nutritive articles such as meat, eggs, fish and fats is lowest in India. Though the consumption of dairy products is slightly higher in India than in Ceylon and

Japan, it is very low as compared to other Western countries. Available supplies of milk and milk products in India are not sufficient to meet the requirements of minimum nutritional

TABLE II
PER CAPITA CONSUMPTION OF NUTRITIVE ARTICLES IN DIFFERENT COUNTRIES

(*Grams per day*)

Countries	Meat	Eggs	Fish	Milk	Fats and Oils
Denmark (a)	174	34	58	722	78
United Kingdom (a)	203	42	26	590	62
United States (b)	273	49	14	657	60
Ceylon (b)	5	5	15	57	10
India (c)	4	1	3	123	11
Japan (b)	28	24	76	100	19
Australia (c)	291	33	15	584	40
New Zealand (b)	304	47	19	747	55
Brazil (d)	73	10	6	173	21
United Arab Republic (e)	36	4	14	124	20
South Africa (f)	122	9	24	266	15

(a) 1965-66; (b) 1965; (c) 1964-65; (d) 1964; (e) 1963-64; (f) 1960-61.
Source: The State of Food and Agriculture 1967, F.A.O. (1967), pp. 167-173.

standard. P. V. Sukhatme in his study of "Food and Nutrition Situation in India,"[7] has estimated that the available supplies of milk and milk products fall short of minimum nutritional standard by about 30 per cent. The deficit is particularly large in meat, fish and egg which provide only about 55 per cent, 42 per cent and 66.6 per cent respectively of what is nutritionally considered as the minimum.

The gross milk production in 1960-61 was estimated at about 22 million metric tons of which 70 per cent is marketed, the balance being either fed to calves or retained for home consumption. Of this, about 39 per cent is used for consumption as fluid milk, about 46 per cent as ghee and butter and the rest

7 *Indian Journal of Agricultural Economics*, Vol. XVII, No. 3, July-September, 1962. p. 11.

as *khoa*, curd and other products. As pointed out earlier, milk yield per cow and buffalo is very low in India as compared to the western countries. The average milk yield per she-buffalo is however found to be 3 to 4 times the average milk yield of the cow. As a result, though the proportion of cows in the total of dairy animals is high, their percentage contribution to the total milk production is low. "Though buffaloes form only 30 per cent of the milch animals, they account for 54 per cent of the milk compared with 42 per cent yielded by the cows."[8]

Draught Power

In India cultivation of land is done largely with the help of bullocks. Though other animals are sometimes used for draught purposes, they are comparatively few in number. The use of horses and ponies as draught power on farms is very rare in India. The fact that bullocks constitute the bulk of livestock population indicates that the farm animals are mainly maintained of Indian agriculture also justifies the indispensability of bullocks for draught purposes. The insignificant extent of mechanisation for agricultural operation.

TABLE III

NUMBER OF CULTIVABLE LAND PER DRAFT ANIMAL AND PER TRACTOR

Year	No. of draft animals (lakhs)	No. of tractors (thousands)	Total cropped area (lakh acres)	No. of acres per draft animal (Col. 4/ Col. 2)	No. of acres per tractor (Col. 4/Col. 3)
1	2	3	4	5	6
1951	672	9	3,259	4.85	36,211
1961	778	34	3,773	4.85	11,097

Source: India — A Reference Annual 1963, Government of India (1963), *Agricultural Situation in India*, April, 1962, *op. cit.*, and Indian Agriculture in Brief, Eighth Edition, Directorate of Economics and Statistics, Ministry of Food, Agriculture, Community Development and Co-operation, Government of India (1967).

8 First Five-Year Plan, Planning Commission, Government of India (1953), p. 280.

The number of acres per draft animal remains the same at about 5 acres over the last decade 1951-61. Though tractors have increased four-fold during this period, they have not significantly reduced the importance of draft animals. In 1951 there was one tractor for as many as 36,211 acres, while in 1961 there is one tractor for 11,097 acres. In view of certain glaring limitations such as lack of adequate capital, technical know-how, timely availability of spare parts and the small size of holdings, mechanisation of Indian agriculture on a large scale will take a long time to materialise. The study of agricultural implements and machinery reveals the preponderance of bullock-drawn implements.

Determinants of the Draught Power

The draught power requirement in agriculture is broadly governed by the method of cultivation — irrigated or dry farming, size of draught animals, crop pattern — mono-cropping or double-cropping and size of holdings. Examination of the relationship between draught animals and the area cultivated shows that the bigger the size of holding the lesser is the number of draught animals required for cultivation. This implies that there is an inverse relation between the number of draught animals and the size of holdings. "We have to remember that as the cultivation is more individualistic, every farmer finds it necessary to keep a pair or more of bullocks if he can afford to do so . . . for the more the number of holdings (per 100 acres of cultivated land) the more is the number of draught animals."[9] The influence of irrigation by wells and draught power is also pointed out by the same study: ". . . the number of draught animals per 100 acres of cultivated land increases as the percentage of irrigated area by wells also increases." The number of labour days per acre is influenced by crop pattern in addition to irrigation. As compared to food crops, cash crops require more animal labour. Even in respect of food crops, labour required for paddy cultivation is comparatively more than that for other crops. Again, bullock labour requirement naturally goes up with the increase in the acreage cropped more than once.

9 Studies in Economics of Farm Management in Bombay State—Report for the Year 1954-55, Directorate of Economics and Statistics, Ministry of Food and Agriculture, Government of India (1958), p. 30.

The preponderant role of bullock power for farm operations is bound to continue until agriculture undergoes a complete structural and technical change. It is however necessary to reduce the number of bullocks on the farms by improving their quality.

Farmyard Manure

Farmyard manure, the main means of conserving the soil fertility, is one of the important by-products of animal husbandry. The farmer in India often maintains the animals, among other reasons, for the purpose of collecting manure, irrespective of the fact whether he has adequate fodder resources or not. "In fact, the reason why a disproportionately large number of other cattle and even of the so-called 'milch cattle' are maintained by cultivators of all category in nearly all States is not so much their need for future replacement or reinforcement, as their contribution to the supply of fuel and farmyard manure."[10] Farmyard manure is usually collected in the manure pits. Most of these pits do not conform to any scientific standard like the compost pits. As a result, the manure collected in the dung pits is exposed to such factors as heat, storms and rains which cause substantial loss of chemical ingredients of the manure.

The chief deficiency of most soils in India is nitrogen, "....it is not difficult to ensure increased yield by manuring and especially by manuring with nitrogen for which the land has the greatest hunger."[11] It should be noted that a large proportion of farmyard manure is wasted in the form of fuel and outside droppings. It has been roughly estimated that "40 per cent of what is produced is used as manure, another 40 per cent is used as fuel and the remainder is lost due to difficulties of collection."[12]

End-Products of the Carcasses

The animals serve as a source of income even after death, as their hides, bones, blood and other offals have many uses. Lea-

10 J. P. Bhattacharjee, "A Note on Cattle in India's Farm Economy," *Indian Journal of Agricultural Economics*, Vol. XIX, Nos. 3 & 4, July-December, 1964, p. 112.

11 W. Burns: Technological Possibilities of Agricultural Development in India (1944), p. 121.

12 Memorandum on the Development of Agriculture and Animal Husbandry in India, Imperial Council of Agricultural Research (1944), p. 27.

ther products are made of hides; bones, blood and other offals can be processed and used as manure. Some of the items are also used in the manufacture of drugs, lubricants, etc. In spite of the high economic value of the dead animals, no systematic effort is made in the villages for making their proper use. Even when the animals are flayed by the local flayers, only hide is utilised. Regarding the use of by-products of the dead animals, the Board of Economic Inquiry, Punjab conducted a survey in 1954-55 in the Punjab[13] and its observations are generally applicable to other States in India also. The survey discovered that (1) nearly 30 per cent of the dead animals are not flayed at all but left to vultures or buried; (2) the methods of removal, flaying and tanning are crude resulting in low quality hides; (3) parts of the animals flayed are not fully and properly utilised; (4) processing of such parts is limited and partial; and (5) a perusal of price spreads between the primary collectors of animal by-products and the final consumers shows that there is a large scale exploitation of the former by the intermediaries. "Now-a-days 20 million carcasses of fallen animals are available annually. Most of them are rotten and decomposed and only partially recovered in by-product utilisation. Properly treated, these 20 million animals would bring a return of Rs. 400 crores, a good part of this in foreign exchange, at the rate of Rs. 200 per animal. Most of this precious wealth is today wasted."[14]

ANIMAL HUSBANDRY PRACTICES

The role of farm animals is very significant in providing milk and milk products to the farmers' diet, the services of draught animals for cultivation of land, farmyard manure for soil fertility and end-products after death as additional income to the cattle owners. All these utilities of the farm animals are not fully exploited. The poor animal husbandry practices such as inadequate feeding, defective breeding, absence of disease control and irrational management of other animal husbandry activities, explain the unsatisfactory nature of livestock economy.

13 Utilization of Dead Animals in the Punjab, Publication No. 31 (1955), p. 58.

14 *Indian Dairyman*, Vol. XVIII, No. 1, January, 1966, p. 27.

Animal feeding is inadequate and unscientific. It is estimated that "the quantity of fodder available is about 78 per cent of the requirements while the available concentrates and feeds would suffice only for about 28 per cent of the cattle."[15] "As concentrates are usually given only to animals which are heavily worked either for milk or draft purposes, it can be said that two-thirds of the cattle can be maintained in a fair condition on the existing fodder and feed resources."[16] Inadequacy is accompanied by malnutrition also, as the farmers do not adopt scientifically recommended feeding standards. These standards are generally practised by cattle breeding farms and agricultural experiment stations. In view of the limited availability of fodder resources, cattle are left to graze in the open with the result that the grazing lands are overcrowded. Large numbers lead to poor feeding and poor feeding comes in the way of attempts to raise productivity. There is thus a vicious circle which it is difficult to break.

It is observed that majority of the animals in the villages are mixed breed and referred to as non-descript. This is largely due to the absence of a systematic or selective breeding. In the Bombay-Karnatak region, it has been found out that as many as 47 per cent of the milch animals in heat were covered by the herd-service in 1955-56 as against 14 per cent by the Government stud bull system. Local breeding bulls accounted for 39 per cent. The dominating role of herd-service in the villages leads to the deterioration in the quality of cattle and buffaloes. Animals in heat are not, in many cases, covered in time. Thus, heat periods are often missed and the calving interval is usually lengthened. "By skilled management it should be possible to breed from them earlier and reduce the dry period by at least three months."[17]

Management in the field of animal husbandry includes besides feeding and breeding, various aspects such as taming and treatment of the animals, shelter and storage of fodder and manure. Animal management is deplorably unsystematic and un-

15 W. Burns calculated that concentrates and roughages were sufficient for only 29.14 per cent and 78.53 per cent respectively of the cattle population. Technological Possibilities of Agricultural Development in India, *op. cit.*, p. 111.

16 First Five-Year Plan, *op. cit.*, p. 273.

17 W. Burns: *op. cit.*, p. 109.

hygienic. Cattle sheds are generally insanitary. Segregation of diseased animals is not observed in most of the cases. Contagious diseases like foot and mouth disease and parasitic infections severely affect productivity of milch and draught animals. Above all, the farmers neglect the healthy maintenance of animals because of the absence of readily available veterinary facilities. Fodder and chaff produced on the farms are not properly stacked and are liable to be wasted. Besides, the farmers hardly practise silage.

Improvement Measures

The necessity of maintaining the productive role of animal husbandry need not be emphasized. In the words of the Royal Commission on Agriculture,[18] "India has acquired so large a cattle population and the size of the animals in many tracts is so small that the task of reversing the process of deterioration and of improving the livestock of this country is now a gigantic one; but on improvement in cattle depends, to a degree that is little understood, the prosperity of agriculture, and the task must be faced." This remark made four decades ago is eminently valid even today. The entire question of cattle improvement boils down to the problem of (*a*) improvement of quality of the animals, (*b*) the reduction in the number of animals and (*c*) efficient management of animal husbandry activities. The solution of these problems largely lies in remedying various unfavourable factors such as poor practices of animal husbandry, poverty of the farmers, public apathy and inadequate transport facilities. Besides, it is necessary to do away with unserviceable and unproductive animals. For this purpose, some effective measures for animal husbandry development such as levying of taxes to discourage the maintenance of unproductive animals, compulsory castration of scrub animals, sterilisation of female species unfit for productive performance and planned slaughtering are necessary.

The All-India *Gosamvardhana Sammelana* held at Hyderabad in March, 1965 under the joint auspices of *Akhil Bharat*

18 Report of the Royal Commission on Agriculture in India (1928), p. 191.

Sarva Seva Sangh, Krishi Go Seva Samiti and Andhra Pradesh *Go Seva Mandal* recommended as under:[19]

(i) That the national importance of the cow in the country's economy should be accepted by the Government of India and the State Governments and improvement of cow be given higher priority in the development plans of the country than hitherto.

(ii) It is now established that by merely providing adequate balanced feeds to the cow it is possible to raise its milk yield by about 40-50 per cent. It is also accepted that India is short of feeds by not less than 33 per cent. Export of cattle feeds or their use for industrial purposes would further cut the availability of these commodities apart from raising their prices. The only alternative is a change in this policy. In the meantime, the Government should consider the supply of cattle feed at subsidised rates especially in areas of the development work. For this purpose feed-mixing plants should be established at every convenient place forthwith.

(iii) Similarly, effective measures, both constructive and legislative, be taken to prevent wastage of high-yielding cows in urban areas by regulating their imports and exports, setting up salvage centres and calf-rearing farms.

(iv) A co-ordinated plan for production and utilisation of superior breeding bulls should also be formulated with the cattle farms as the highest development centres, approved *Goshalas* and key villages in breeding tracts as seed multiplication centres and the subsidiary cattle breeding centres, other key village centres and *Gram Panchayats* as utilisers of good bulls for improvement of village cattle.

(v) At least one lakh cows of each of the recognised dual and milch-purpose breeds in a concentrated area be registered and package programme for their development envisaging breeding, feeding, management and care and marketing should be implemented.

(vi) Improvement of recognised indigenous breeds should be effected by adopting selective breeding. The non-descript and

19 *Indian Livestock*, Vol. III, No. 2, April-June, 1965, pp. 22-23.

uneconomic cows should be upgraded by bulls of indigenous dual purpose and milch breeds. Cross-breeding of non-descript cattle with exotic bulls may be undertaken especially in hilly areas, industrial townships and cities and areas with concentrated population ensuring that the availability of draught animals is not affected.

(vii) In all the areas under development schemes, efforts should be made to ensure castration of all scrub bulls. *Nandi-shalas* and artificial insemination centres should be established for ensuring proper breeding.

(viii) As it may not be possible to sustain very high producing animals in areas of the non-descript cattle, it will be desirable to lay down a national standard for the level of their production which is to be achieved in the graded progeny. This should be related to the availability of bulls, the possibility of increasing fodder production and introducing better marketing and management facilities.

(ix) Since the co-operation of the private sector is essential for the successful implementation of cattle development programmes, it is necessary that an agency be created at the village level by which cattle development work is taken up in an integrated manner jointly by the officials, the farmer and the *Krishi Go-Sevaks*.

(x) It is suggested that the unproductive cows be made sterile by painless and bloodless methods; this technique should be popularised among the cattle owners, taking into account the needs of the people in the area and their economy. This should be done so as to avoid artificial shortage of cattle wealth later on or of the products and the raw materials they give or otherwise affecting prejudicially the breed in the area known for its potential for draught animals.

(xi) Stray and unproductive cattle in the villages should be rounded up and kept in the villages in pounds where cattle dung (*gobar*) gas plants should be installed for utilisation of their manure.

(xii) Talukas and district level *Gosadans* should be established in co-operation with the Khadi and Village Industries Board.

Most of the farmers do not possess their own grazing lands, nor can the common grazing lands be relied upon for the increasing requirement of animal feeds and fodder. The Grow More Food Campaign envisaged the bringing of such common lands and other waste lands under the plough. In view of these considerations, supply of fodder may be ensured by increasing the scope of mixed farming. This type of farming contemplates a sound balance between crop production and cattle maintenance keeping in view the capability of the land to support the optimum number of cattle heads. Besides, mixed farming naturally follows from the long-standing interdependence between crop production and animal husbandry. The Agricultural Production Team of the Ford Foundation has remarked that "the development of agriculture on mixed farming lines seems to be the most rational pattern for agricultural development in India."[20] Thus it is obvious that crop production and animal husbandry should be treated as complimentary for mutual benefit. The Planning Commission has also emphasized its importance and made a plea for popularising and systematising mixed farming. The draft Fourth Plan has also recognised that adequate and proper feeding of livestock is fundamental to their economic production. In order to bridge the gap between the demand and supply of feeds and fodder, a number of programmes has been proposed. Production on modern lines of fodder crops and grasses will be encouraged. As a result of research, a number of superior types of grasses and fodder crops have been identified. Their production will be economical and helpful in providing proper nutrition. It is proposed to undertake intensive fodder development in intensive cattle development and key village blocks. It is also proposed to establish 50 seed production farms and 25 mixed farming units, develop 25 grass *birs* and to exploit forest grasses. Pasture development and controlled grazing will be given high priority in semi-arid areas suitable for cattle and sheep rearing.

20 Report on India's Food Crisis and Steps to Meet It, The Agricultural Production Team Sponsored by the Ford Foundation, Government of India (1959), p. 231.

LIVESTOCK POLICY IN INDIA

Livestock policy has a definite place in India's agricultural planning. During the First Plan, the policy for animal husbandry (including dairying) development was very general in its approach. The programme of livestock improvement is sought to be implemented mainly through the key village scheme, supplemented by measures like disease control, veterinary education, etc. The Second Plan put forth a definite cattle breeding policy and made provision for research at national, regional and State levels. The same policy has been continued in the Third Plan with expanded scope and certain additional measures. Before going into details of this policy, certain legislative measures enacted prior to the launching of development programmes under the Plans need critical appraisal. To improve the health of the cattle, many States have enacted Livestock Improvement Act and Control of Contagious Diseases Act. The Livestock Improvement Act provides for compulsory castration of scrub bulls, penalty on keeping of unapproved bulls for breeding and veterinary aid when required. It is, however, observed that this Act has not been implemented effectively excepting castration of bulls of willing cattle owners.

The Control of Contagious Diseases Act recognises contagious diseases and empowers veterinary officers to enforce compulsory inspection of premises where cattle are kept. It provides for regulating the inter-State and intra-State trade or movement of cattle and holding of markets and fairs, and enforces compulsory disinfection of vessels, vehicles and all infective materials. The Act also makes provision for conducting post-mortem, isolation of infected animals, compulsory inoculation of animals and other measures which may be necessary for the prevention or spread of the scheduled diseases. It lays down a penalty for non-compliance of any of the instructions to enable cattle to be protected. This Act has not been effectively enforced, excepting for the departmental measures like inoculation and vaccination in times of epidemic break out. For instance, more than 50 per cent of the attacks by contagious diseases end in death.[21] This perhaps is due to lack of quick reporting of the

21 Administrative Report of the Department of Animal Husbandry Services in the Mysore State for the Year 1957-58, Government of Mysore (1959).

diseases and the absence of immediate availability of veterinary help. These shortcomings are aggravated by the fact that veterinary hospitals and dispensaries are too few in number. There was one hospital for every 77,000 bovine population at the end of the First Plan and one for about 57,000 at the end of the Second Plan. The number of veterinary hospitals and dispensaries is expected to increase to 8,000 during the Third Plan period.[22] Till 1962-63, about 92 per cent of the inoculable bovine population in the States has been vaccinated against rinderpest.[23] At the time of epidemics the enforcement of the Act is a little better. However, it is evident that these Acts need more effective implementation.

Cattle Breeding Policy

Since time immemorial the Indian cow is known for its multipurpose utility. The recent trends in breeding policy aim at evolving and developing "dual purpose" breeds, which will provide both good bullocks for effective cultivation and increased quantities of milk for human consumption. This proposition may be open to controversy but this seems to be guided by the greater demand for milk from increased tempo of urbanisation and by the utmost necessity of bullock power for agricultural operations under the existing situation. The all-India breeding policy drawn up by the Indian Council of Agricultural Research and accepted by the Central and State Governments envisages that in the case of well-defined milch breeds the milking capacity should be developed to the maximum by selective breeding and the male progeny should be used for the development of 'non-descript' cattle. In the case of well-defined draught breeds, the aim is to put as much milk into them as possible without materially impairing their quality for work.[24]

The draft Fourth Plan recognises the need for organising cattle development programmes on the lines of intensive package programme of crops and linking cattle development with dairy

22 Third Five-Year Plan, Planning Commission, Government of India (1961), p. 349.

23 The Third Plan Mid-term Appraisal, Planning Commission, Government of India (1963), p. 93.

24 Second Five-Year Plan, Planning Commission, Government of India (1956), p. 284.

schemes. The salient features of the revised cattle breeding policy are: selective breeding in recognised breeding tracts, increase in milk production among the draught breeds, upgrading of non-descript with recognised dairy breeds and cross-breeding with exotic breeds in hilly and other areas having facilities for rearing and maintaining high-yielding milch animals. Programmes based on this approach have been introduced in different States. Each intensive cattle development project covers one lakh cows/she-buffaloes of breedable age and is linked up with a major dairy scheme. Increase in milk production to the extent of 30 per cent in 5 years has been laid down as the maximum target for each project. By 1966-67, 22 intensive cattle development projects had been set up in ten States. During 1967-68, five projects are expected to be set up in Assam, Kerala, Jammu & Kashmir, Mysore and West Bengal. It is also proposed to set up three more Centrally sponsored projects in Haryana and Rajasthan with a view to increasing the production of milk for supply to the Delhi Milk Scheme. To meet the increasing demand of exotic animals two Jersy farms will be expanded. Extensive areas will be covered with important breeds like Hariana, Tharparkar, Gir, Sindhi and Sahiwal.

For the implementation of the cattle breeding policy each State has been divided into zones according to the breeds used in them. Thus, in the districts of Ahmedabad, Kaira, Broach and Surat, the recognised breed is 'Kankrej'. In the Western tracts of Uttar Pradesh like Saharanpur, Muzaffarnagar, Aligarh, Mathura, etc., the usable breed is 'Hariana.' In the hilly tracts such as Dehra Dun, Garhwal, Almora and parts of Nainital where the cattle are non-descript, Sindhi bulls have been recommended.

Cattle Insurance

Epidemics take a huge toll of deaths. The total annual loss to the country through epizootics has been estimated at Rs. 3 crores. Indirect effects of the contagious diseases also are dangerous. In view of these considerations, the problem of cattle insurance was examined as early as 1950. But only recently a beginning has been made by the Co-operative Mutual

Insurance Company, Bombay, to insure milch animals and draught cattle in the States of Maharashtra and Gujarat. Schemes to investigate the possibilities of cattle insurance have been proposed by Andhra Pradesh, Uttar Pradesh, Maharashtra, Rajasthan, Mysore, Madras and Punjab.

ANIMAL HUSBANDRY PROGRAMMES UNDER COMMUNITY DEVELOPMENT SCHEMES

The Community Development programme has been considered as an important method for the integrated and intensive development of the rural areas. This programme envisages, among others, the improvement of animal husbandry. Livestock improvement measures included in the Community Development programme consist mainly of (*a*) castration of scrub bulls, (*b*) inoculation and vaccination when any epidemic breaks out, (*c*) treatment of diseased animals, (*d*) distribution of premium bulls, (*e*) popularising fodder crops and (*f*) holding advisory meetings. Besides these improvement measures, the key village scheme has also been introduced in a number of blocks as an integrated means of development of animal husbandry.

The Planning Commission in India has advocated the key village schemes for an all-round development of animal husbandry in its Five-Year Plans. The scheme envisages castration of scrub bulls, breeding operations controlled by artificial insemination centres (each of which is intended to serve 5,000 cows of breeding age), rearing of calves on a subsidised basis, development of fodder resources and the marketing of animal husbandry production on co-operative lines. Consequently, intensive cattle improvement has been undertaken in selected areas. In all, 2,000 key village units have been set up up to the end of the Second Plan and during the Third Plan, the coverage of each block was expanded so as to contain 10 key village units while each key village block in the First and Second Plans contained 4 units and 6 units respectively. In the Draft Outline of the Fourth Plan, it is proposed to set up 100 new key village blocks and to expand the existing 209 blocks. Besides, 27 bull rearing farms are to be established and expansion of 60 existing livestock farms is envisaged. It is also proposed to develop 390 *goshalas* into breeding-cum-milk production centres.

The working of these schemes has shown that the work so far done is mainly concerned with veterinary aspects rather than animal husbandry proper. Besides, no definite programme has been undertaken for the purpose of increasing the acreage under fodder crops. Little progress has been achieved by the calf-subsidy scheme and co-operative marketing of animal husbandry products. "The All-India Key Village Scheme was planned as a co-ordinated programme which would bring about improvement in feeding, management, breeding and marketing. In practice, however, this integrated approach was ignored or at least neglected. As a result, practically the only tangible evidence that the key village scheme was undertaken, has been the calves produced by artificial insemination. Beneficial possibilities of this phase of the scheme have been largely eliminated, however, because of failure to improve feeding practices."[25]

The key village scheme, which has been the main programme for intensive cattle development during the first two Plans, has been recently re-examined by an expert committee appointed by the Planning Commission before drafting the Third Plan. The Committee has suggested that State Governments should review the operation of the key village blocks with a view to improving their working and closing down such of the blocks as have not produced satisfactory results. To overcome the shortage of high grade bulls, it has been recommended that State Governments should formulate well-considered purchase programmes, and progeny testing programmes should be taken up at Government farms as well as private farms where the necessary facilities exist or can be provided. To achieve satisfactory breeding control in the key village areas, it is proposed that the castration programme should be intensified and propaganda undertaken in favour of early castration of males. It is also proposed that the programme for the rearing of bull calves in key village areas should be expanded. The Committee has drawn attention to the fact that the feed and fodder development programme associated with the key village programme has not made satisfactory progress. To remove this defect, it has made a number of recommendations, including better use of the existing fodder

25 Report on India's Food Crisis and Steps to Meet It, *op. cit.*, p. 231.

resources, control of grazing where pastures have been developed, cultivation of fodder crops on marginal and sub-marginal lands, introduction of suitable leguminous crops in rotation with paddy, construction of silo pits and popularisation among farmers of cultivation of pasture grasses and feeding of balanced rations. The need to organise the marketing of livestock and livestock products through co-operative marketing societies of cattle owners has been stressed. A number of proposals has also been made for improving existing arrangements concerning artificial insemination.[26]

All the above suggestions and certain new measures like the establishment of in-service training centres and setting up of marketing cells in the Animal Husbandry Department have been proposed for implementation during the Third Plan. A provision of Rs. 5.19 crores has been made in the Third Plan for this scheme. With a view to stepping up the milk production for meeting increasing needs and holding the price line in urban areas, the States have been advised to take up intensive cattle development work by locating the expanded key village blocks envisaged under the Third Plan in the milk-shed areas of dairy projects duly supported by feeds and fodder development and rural dairy extension programmes.

Research and Education

Livestock can make a larger contribution to public health and to the economy of the country if improvements are brought about through judicious breeding, proper feeding, adequate protection against losses from diseases and other causes. The improvement in the general conditions of husbandry and management should be simultaneously taken up. All these development programmes have to be based on extensive scientific research. During the First Five-Year Plan, apart from research schemes sponsord by the Indian Council of Agricultural Research, veterinary research and animal husbandry in general did not receive sufficient attention. The Second Five-Year Plan, however, provided for a more comprehensive programme of development of animal husbandry and expansion of research facilities. Accord-

26 Third Five-Year Plan, *op. cit.*, pp. 346-347.

ingly, animal husbandry research has been organised at three levels, *viz.*, national, regional and State. The Indian Veterinary Research Institute and the National Dairy Research Institute are the Central institutes at the national level. These are mainly responsible for fundamental work on problems of national importance, development and standardisation of new techniques (including biological products) and institution of specialised post-graduate courses, etc. These institutes are being strengthened and expanded during the Third Plan period.

Since geographical factors influence animal husbandry conditions, many research problems of regional importance are best studied in regional institutions. For animal husbandry research and development, the country has been divided into four regions, namely, temperate (Himalayan), dry (northern), eastern and southern regions. It is proposed to develop four research institutes, one in each of the four regions. The First Five-Year Plan initiated these stations through the Indian Council of Agricultural Research and consequent Plans have strengthened them with adequate finance. The Indian Council of Agricultural Research has also organised nucleus centres for veterinary research in most States. The State Governments have provided in their Plans for the further strengthening of their existing organisations. It is important that the results of research carried out at the Central and regional institutes are applied and adapted to local conditions. In order to provide trained personnel for implementing the development programmes, 14 veterinary colleges including five post-graduate colleges have been established during the First and Second Plans. The Third Plan proposed to set up two more colleges. It is expected that all these colleges would produce 5,800 graduates by the end of the Third Plan as against the requirements of 6,800 veterinary graduates.

DAIRY DEVELOPMENT

The place of dairy farming in the development of the agricultural economy is now fully recognised. The importance of milk as a wholesome diet containing almost all vitamins and making good the deficiencies of the preponderantly cereal diet needs no emphasis. The dairy industry in India is, however, faced with several problems such as, scattered and small scale milk produc-

tion, inadequate transport facilities in most parts of the country, dependence on imported plant and machinery required for milk collection, processing and manufacturing, shortage of technical and skilled personnel and the lack of properly organised system of marketing. Besides, there is a problem of a large number of unproductive milch animals. For example, according to one survey in Maharashtra State, it was found that as high as 70 per cent of breeding cows are reckoned to be unproductive.[27] In the case of breeding she-buffaloes the corresponding figure amounts to 55 as can be seen in Table IV. As already mentioned, a

TABLE IV

PERCENTAGE DISTRIBUTION OF BREEDING FEMALE POPULATION ACCORDING TO MILK YIELD RATES

Breeding cows		Breeding she-buffaloes	
Yield rate per day (in seers)	Percentage to the total	Yield rate per day (in seers)	Percentage to the total
0.25 or below	10.6	0.50 or below	6.4
0.26 — 0.50	25.3	0.51 — 0.75	3.8
0.51 — 0.75	13.5	0.76 — 1.00	10.6
0.76 — 1.00	19.2	1.01 — 1.50	15.0
1.01 — 1.50	13.4	1.51 — 2.00	20.5
1.51 — 2.00	10.2	2.51 — 3.00	13.6
2.01 — 3.00	5.2	3.01 — 4.00	9.8
3.01 — over	2.6	4.01 — 5.00	4.8
		5.01 and above	4.2
Total	100.00	Total	100.00

Source: *Indian Journal of Agricultural Economics*, Vol. XX, No. 1, January-March, 1965, p. 89.

large number of unproductive breeding animals is an attempt to compensate the shortage of milk supply in the country. In spite of large cattle population, per capita availability of milk is low.

27 Milch cow yielding less than one seer per day is counted to be unproductive as the cost of feeding is higher than the value of a seer. Similarly a milch buffalo is unproductive if it yields less than two seers a day.

It is seen that per capita consumption of milk and dairy produce in India is the lowest of all countries except Ceylon and Japan. The shortage of available milk produce is again aggravated by the fact that the consumers in urban and industrial centres are

TABLE V

ESTIMATED CONSUMPTION PER HEAD OF MILK AND DAIRY PRODUCE — FAT AND PROTEIN CONTENT

(*in lbs.*)

	Milk and milk products (excluding butter)		Butter		Milk and milk products (excluding butter)		Butter
	Fat content	Protein content	Fat content		Fat content	Protein content	Fat content
U.K. (a)	17.0	16.8	15.9	Netherlands (a)	18.3	18.7	9.7
Australia (b)	16.3	15.2	19.7	Sweden (a)	20.7	20.7	17.7
New Zealand (c)	24.7	23.8	35.3	Switzerland (b)	21.8	19.6	11.8
Canada (a)	15.7	18.3	15.6	Ceylon (c)	2.0	1.8	0.3
United States (c)	17.9	17.9	5.7	India (b)	5.7(d)	3.7(d)	—
Denmark (b)	19.8	19.6	18.9	Pakistan (b)	7.7(d)	6.0(d)	—
Finland (b)	27.8	27.6	33.9	Japan (c)	2.6	2.2	0.4
West Germany (a)	12.3	14.6	16.0	South Africa (c)	6.4	6.4	4.8

Source: *Indian Dairyman*, Vol. XIX, No. 3, March, 1967, p. 107.

Note: For butter, fat content represents 82 per cent of estimated product weight. 1.1 lb. × 0.454 = kg.

(a) 1963-64; (b) 1962-63; (c) 1963; (d) including butter.

fast increasing. Price of milk in these areas is relatively higher than that in rural areas. In consequence, cities attract milkmen who keep milch animals under unhygienic conditions. Various dairy projects included under the Five-Year Plans have therefore two-fold objectives, namely, to provide remunerative market for

the producer and assured supply of wholesome milk to the consumer at reasonable price. It is also gratifying that the Draft Outline of the Fourth Plan envisages the establishment of 30 intensive cattle development projects as a measure of meeting increased demand for milk and milk products.

In view of above considerations dairy development programmes under the Plans include establishment of city milk plants, colonisation of cattle, establishment of milk product factories and rural creameries, rural dairy extension and training of technical personnel. For all these programmes, there was a provision of Rs. 7.81 crores and Rs. 17.44 crores in the First and the Second Plan respectively. The Third Plan allotted Rs. 36 crores and the draft Fourth Plan has tentatively earmarked Rs. 59 crores for the dairy development programmes including milk supply schemes. The new milk supply schemes will each have a handling capacity from 6,000 to 10,000 litres of milk per day and the rural dairies will have a capacity ranging from 500 to 4,000 litres daily. As on April, 1968, there were 84 dairy plants in operation, comprising 43 liquid milk plants, 34 pilot milk schemes, 4 milk powder factories and 3 creameries. In addition, 43 other milk schemes including expansion of pilot milk schemes and 6 milk product plants were in different stages of implementation. It is also proposed to establish 198 rural dairying centres and 12 cattle feed compounding factories in conjunction with large dairy plants. The dairy extension programme which includes organisation of co-operative societies, granting of loans for purchase of milch animals, setting up of feed supply units, providing extension staff to help farmers in increasing the production of milk and its hygienic handling, and assuring remunerative prices to the producers would form an integral part of the dairy development programme. In 1967-68, the average daily through-put of milk of all the plants was estimated at about 1.6 million litres. The main problem facing the milk schemes is the acute shortage of milk in summer combined with high prices. Attempts are, therefore, being made to generate more milk in rural areas particularly in the intensive cattle development project areas. Cattle colonies have been organised at Haringhatta (Calcutta), Madhavapuram (Madras) and Aarey (Bombay). Train-

ing in dairying has been taken up at six centres in Karnal, Bangalore, Aarey, Anand, Allahabad and Haringhatta with the assistance of the United Nations International Children's Emergency Fund (UNICEF). Special courses in dairy engineering and dairy extension have been started in Karnal. Under the dairy training programme instituted in 1960 with the assistance of F.A.O. and the Government of Denmark, two courses were held during 1962-63 for the benefit of trainees from Asia and the Far East.

The main features of dairy research will be the expansion, consolidation and stabilisation of research programmes and augmentation of activities initiated earlier. Under the Central sector, the National Dairy Research Institute would be expanded. Similarly, dairy training facilities would be expanded to cater to the needs of the expanding dairy industry.

NATIONAL MILK POLICY IN THE FOURTH PLAN

In the light of the experience gained, it has been considered desirable to evolve a national milk policy. With this objective in view, the approach in the Fourth Plan would take into consideration the following:

(*a*) Completion and consolidation of milk supply schemes already established to ensure maximum utilisation of the installed capacities of the different milk plants;

(*b*) Collection of milk should be organised through primary co-operative milk societies or service co-operative societies. The primary societies should form themselves into milk unions which should, as far as possible, own and operate the pasteurisation plants and other processing units;

(*c*) Expansion of the milk supply schemes to the extent possible;

(*d*) Setting up of rural dairy centres and the intensive development of milk production in selected areas by taking up well-knit programme for dairy extension and cattle improvement. Areas offering good potential for dairy

development under better climatic and other conditions will be given preference;

(*e*) Setting up of milk plants in areas offering good scope for marketing and developing the hinterland for milk production;

(*f*) Expansion of indigenous manufacture of dairy machinery and equipment;

(*g*) Adoption of such measures and policies as may be conducive to the development of cattle;

(*h*) Encouragement of co-operatives in the dairy sector.

WORKING OF ORGANISED DAIRIES IN PUBLIC SECTOR

Under the different Five-Year Plans a number of dairies have been established with a view to supplying good quality milk at reasonable prices. The working of many of these, however, is not satisfactory. "It has been noted with concern, however, that many of these dairies especially those under the public sector have been running invariably at below-rated capacity."[28] There are many problems facing these milk supply schemes. These are, for example, (1) low density of milk production, (2) seasonal fluctuation in milk production and consumption, and (3) rising prices of essential commodities of daily life. In order to solve these difficulties following measures have been suggested. Firstly, every effort should be made to obtain increased milk production at an uniform and regular level of supply. Secondly, serious attention should be given to reduce the use of milk for manufacturing sweets. Thirdly, price policy of milk supply should be devised to safeguard the interest of both producers and consumers in the form of fair price fixation according to seasons. If possible, producers should be given an incentive to produce milk during the lean period. Fourthly, milk collection and transport should be organised on a wider scale. Fifthly, co-operative dairies should be encouraged in large numbers. Mr. Ansgar Welle, F.A.O. dairy economist,

28 *Indian Dairyman*, Vol. XIX, No. 4, April, 1967, p. 109.

after a comprehensive study of the Indian dairy industry observes that the main bottleneck in the development of the dairy industry is lack of milk, not shortage of modern marketing and processing facilities. He also mentions under-use of dairy plants, inadequate book-keeping and cost analysis, continued grip of the middleman in marketing, low milk yields, overstaffing and the limited success of co-operative as the main dangers on progress of the industry.[29]

Government milk supply schemes at Aarey and Worli may be mentioned among others as prestige schemes in the public sector, whereas co-operative dairies such as the Kaira District Co-operative Milk Producers' Union Ltd., and Mehsana District Co-operative Milk Producers' Union Ltd., are outstanding in the co-operative sector. The Kaira District Co-operative Milk Producers' Union Ltd., which was organised in 1946, covered 518 primary milk producers' societies having a membership of about 85,000 individual farmers in 1964-65 in an area of about 3,000 square miles. The Union started in a small way pasteurising and despatching 500 litres of milk per day to the Bombay Milk Scheme. As the Union was confronted with a serious problem of surplus milk during the winter season, it set up a new dairy ('Amul') factory in 1955 with financial assistance from UNICEF, Oxford Famine Relief (OXFARM), Government of New Zealand, Government of Gujarat and Government of India for the manufacture of milk powder, condensed milk, baby food, casein, cheese and butter. The total investment in the dairy industry amounted to about Rs. 1.27 crores up to 1964. The contribution of share capital by milk producers of this Union increased from Rs. 40,000 in 1947-48 to Rs. 12.60 lakhs in 1964-65.[30] In 1963-64, the Union collected from its producer-members 150 million lbs. of liquid milk and processed it into milk products with an estimated turnover, including liquid milk sales, of Rs. 6 crores. The processing capacity of liquid milk was planned to be doubled to a million lbs. per day from 1964.

29 *Agricultural Situation in India*, Vol. XXII, No. 1, April, 1967, p. 31.

30 D. K. Desai and A. V. S. Narayanan, 'Impact of Modernization of Dairy Industry on the Economy of Kaira District," *Indian Journal of Agricultural Economics*, Vol. XXII, No. 3, July-September, 1967, pp. 60-61.

About half of the 2 lakh milch cattle in the Kaira district belonged to the members of the Union. In 1964-65, the Union launched a comprehensive seven-year plan for doubling milk production by doubling yields. The plan includes better breeding of animals by artificial insemination, better feed management by providing nutritious cattle feed, health and hygiene and a special fodder development programme. The outlay on the plan is estimated at Rs. 2.10 crores. Milk production is planned to be doubled as follows: 45 per cent by improved animal nutrition, 10-15 per cent by better breeding, 20-25 per cent by more regular calving that will reduce the 'dry gap' between lactation periods and 10-15 per cent by improved health and hygiene. In 1964, a cattle feed plant was started at Kanjari with an investment of Rs. 31 lakhs. It is estimated that all these efforts have resulted in increasing the average milk yield per animal per day from 6.31 lbs. in the case of non-members to 7.21 lbs. in the case of members, with an overall milk yield per animal at 6.81 lbs. per day.

The Mehsana District Co-operative Milk Producers' Union Ltd. has now a network of 240 primary milk producers' societies at the village level and at the apex is this Union which is the federation of all these primary societies producing and supplying milk to this Union through several collection centres. Immediate plan of this Union is to handle 1,20,000 litres of milk per day. The Greater Bombay (Aarey and Worli) Milk Scheme during the month of May, 1967, for instance, procured 2,26,629 litres of milk daily and daily distributed 1,61,658 litres of buffalo milk, 1,70,393 litres of toned milk and 677 litres of cow milk and consumed 264 tonnes of skim-milk powder during the whole month for preparation of toned milk. This scheme handled up to 68 per cent of the installed capacity.

Other Development Schemes

There are numerous other development schemes which are at different stages of implementation. These schemes are concerned with feed and fodder development, calf rearing, *goshala* development, *gosadan*, stray and wild cattle catching, improvement of hide flaying, curing and carcass utilisation, nomadic

cattle breeders, sheep and wool development and poultry development.

The Central Council of *Gosamvardhana* was reorganised in 1960 to assist private institutions and organisations which are already engaged in cattle development, particularly the cow. The Council performs specific functions of organising, implementing and co-ordinating the activities relating to the preservation and development of cattle. It also administers schemes for increasing milk yield and improving draught quality. The Council runs training centres for *goshala* and *charmalaya* workers, organises exhibitions and issues journals and pamphlets to field workers. Eventually, its attempt would be to bring about a better co-ordination between various agencies interested in *gosamvardhana* work.

CONCLUSION

The animal husbandry and dairy development policy under the Plans seems to be well-conceived. But these development programmes continue to face serious difficulties — technical, administrative and practical. In spite of the emphasis on providing trained technical personnel, the available supply of veterinary graduates is yet not adequate. Similar is the case in respect of stockmen, dairy technologists and engineers, etc. Administrative difficulties crop up at the time of implementation. The first and foremost drawback in implementing the development programmes is the lack of co-ordination among various departments through which these programmes are carried out. In the case of some Community Development Project and N.E.S. blocks there is no well-defined demarcation of functions between block officials of animal husbandry programmes and animal husbandry development personnel. It is therefore necessary to formulate a well-integrated programme for animal husbandry including the key village scheme, mixed farming and dairy development, irrespective of where the work is done or who does it. In view of development measures for rural reconstruction such as community development, integrated agricultural production programme (package scheme), key village scheme, integrated credit system, etc., the urgency is keenly felt of teamwork among various de-

partments of the Government and of enlisting people's co-operation and participation. Moreover, technical personnel in animal husbandry, agriculture, co-operation, community development and related subjects, instead of working in compartments, have to work together as a team. It is also necessary that in view of the importance of animal husbandry and dairying in India's economy, the allocation of resources to this sector should be adequate.

PART II

CHAPTER VII

EVOLUTION OF INDIAN AGRICULTURAL POLICY

TRADITIONAL AGRICULTURE IN INDIA

Before the advent of the British, India has evolved a socio-economic structure which maintained some kind of a static equilibrium. Population growth was slow; the pressure on land was not yet felt. Traditional agriculture developed as a part of this pattern of socio-economic evolution. The methods of cultivation had settled down to a customary routine based on the practical experience of generations of shrewd, though not educated, farmers. The stratification of rural society on the basis of the caste system provided a shelter for everyone, however humble; above all, the old village economy based on self-sufficiency was a protection against political cataclysms.[1] The standard of living was by no means high but India had developed a fairly balanced economy. The fame which India had earned in the outside world for her handicrafts and artistic products was maintained; her ships crossed far-off seas. The high state of 'industrial' development in India at this time when the West of Europe, the birth-place of modern civilisation, was still in a primitive stage, has been a fact of recorded history.[2] The impact of modern industrialism destroyed the self-sufficiency of the village. The old towns, the centres of handicrafts and manufac-

1 "The cultivator is thus a member of a definitely organised community, which has, as far back as the history of social organisation in India can be traced, been dependent on itself for the means of living and, to a very large extent, for its government." As a result, the typical cultivator is within the sphere of his experience, self-reliant and "both his methods of cultivation and his social organisation exhibit that settled order which is characteristic of all countries in which the cultivating peasant has long lived in, and closely adapted himself to the conditions of a particular environment." Report of the Royal Commission on Agriculture in India (1928), p. 479.

2 Minute of Dissent by Pandit Malaviya, Report of the Indian Industrial Commission (1918), pp. 296-297. See also R. C. Dutt: Economic History of India under Early British Rule, 1757-1837, Vol. I (1901), p. vii, where India is described as "a great manufacturing as well as a great agricultural country" in the 18th century, the products of the Indian looms supplying the markets of Asia and Europe.

tures decayed. The old social order based on status and custom gave place to a new one based on contract and the cash nexus with a centralised system of administration. While the old system was allowed to crumble, nothing new was designed to be put into its place.

BEGINNINGS OF AGRICULTURAL POLICY

The series of famines in the country after the 'seventies of the 19th century impressed on the Government the need for placing Indian agriculture on a sounder footing and improving the economic conditions of the masses. The Famine Commissions of 1880, 1898, and 1901, the Irrigation Commission of 1903 and the Committee on Co-operation of 1915 made several constructive suggestions for the improvement of agriculture and for the promotion of the welfare and prosperity of the rural population.

The Commission appointed in 1866 after the great famine of Bengal and Orissa proposed for the first time the creation of a special agricultural department. This was however considered 'premature.' In 1869, the cotton interests in England which had considerable influence in shaping the agricultural policy of the Government of India urged the Secretary of State to undertake measures for the improvement of cotton in India and with that purpose, to set up a separate Department of Agriculture in each Province. However, little real progress could be made until 1880. The Famine Commission of 1880 made a thorough enquiry into the problem and made extensive suggestions in their report for agricultural improvement. The provision of irrigation facilities and the improvement and extension of the means of communication were among the main recommendations of the Commission. The Commission also recommended that industries should be developed to absorb the surplus population on the land. It referred to the unfortunate circumstances that made "agriculture almost the sole occupation of the mass of the population" and pointed out that "no remedy for present evils can be complete which does not include the introduction of a diversity of occupations through which the surplus population may be drawn from agricultural pursuits, and led to find the means of subsistence in manufactures or some

such employments."[3] The other proposals of the Commission were: (i) the revival of the Department of Agriculture of the Government of India to be entrusted with "the duty of collecting experience of past famines and of undertaking definite and permanent charge of the administration of famine relief;" (ii) the simultaneous formation in all Provinces, of Departments of Agriculture with a large subordinate establishment working under each Director of Agriculture; (iii) the distribution of loans to farmers by Government on the security of land; and (iv) the appointment of special courts to examine the debts of agriculturists with a view to effecting an equitable reduction and arranging for payment by instalments. As the Royal Commission on Agriculture mildly put it: "The Government of India took no immediate action on the proposals....." and, "the next ten years were spent mainly in conferences and in investigating the position in the Provinces with a view to discovering the lines of development best suited to their needs."[4]

VOELCKER'S REPORT

The improvement of agriculture in India was first thought of in terms of agricultural chemistry. J. A. Voelcker, Consulting Chemist to the Royal Agricultural Society was deputed to India in 1889 "to advise upon the best course to be adopted in order to apply the teachings of agricultural chemistry to Indian agriculture." His report has left its impress on all subsequent investigations dealing with agriculture in India and the Royal Commission of 1928 also drew largely on it. Voelcker first of all exploded the myth that Indian agriculture was, as a whole, primitive and backward.[5] In the opinion of Voelcker, the differences in agricultural conditions and practices in India were accountable to three factors :

3 Report of the Famine Commission, 1880, Vol. I, p. 175.

4 See Report, pp. 17-18.

5 "At his best the Indian *raiyat* or cultivator is quite as good as, and in some respects, the superior of the average British farmer, while at his worst it can only be said that this state is brought about largely by an absence of facilities for improvement which is probably unequalled in any other country...... Certain it is that I, at least, have never seen a more perfect picture of careful cultivation combined with hard labour, perseverance, and fertility of resource than I have seen at the very many of the halting places in my tour." Report on the Improvement of Indian Agriculture (1893), p. 11.

(i) differences "inherent in the people themselves" as cultivating classes which distinguished certain castes and races as good at farming from others.

(ii) differences "arising from purely external surroundings" such as: (*a*) natural causes like climate, soil, facilities for water, manure, wood, grazing, etc., (*b*) economical or political conditions like the relative ease or difficulty of living, paucity or pressure of population, etc.

(iii) differences "arising from want of scientific knowledge," for instance, of the existence of diversity of agricultural practices in different parts of the country.

These differences have been illustrated in the report so as to indicate in each case the possibilities of improvement and the agencies, Government as well as private, through which and the manner in which these improvements could be brought about. While some of the differences are rooted in the physical and social environment and are therefore difficult of improvement, others are more easily amenable to reform. An analysis of agricultural conditions and problems along these lines at once gives the clue to the directions of improvement to which the agencies have to apply themselves. The report discusses in turn, soils, manures, forestry, animal husbandry, seed improvements, rural education, research, the organisation of statistics, etc., and on each one of these heads, the suggestions offered have value even under present conditions.

Voelcker refers to "a pretty general belief that soil *is* becoming less productive" and attributes this to the lack of manures and "the export of oilseeds, cotton and other products, besides an increasing one of wheat, all of which remove a considerable amount of the soil constituents."[6] In regard to the remedial measures, the report points out that "improvements in the system of land tenure, improvement of the land by expenditure of public and private capital on it and similar measures may alleviate the conditions of the Indian cultivator, but they will not give him larger crops and they will not provide the food that the people *must* have to live upon. For this, the *soil* itself must be looked

6 Report, p. 39.

into, as it alone can produce the crops and manure alone can enable it to bring forth the necessary increment."[7] The appropriate remedies suggested are irrigation by canals, tanks and wells and the use of manures.

As to manures, it is pointed out that the Indian cultivator was not ignorant of their utility. The practice of burning of cow-dung was largely due to the absence of cheap fuel; it was therefore the duty of Government to provide the people with wood for fuel to prevent this wasteful practice.[8] This indicated a new policy for protection of forest resources and for the promotion of arboriculture. The report emphasizes the need for a change of outlook on the part of the Forest Department and observes, "the results must not be gauged by financial considerations alone, but by the benefits conferred on the agricultural population, the keeping up of the soil's fertility and the maintaining of the Land Revenue to the State."

Among "the economical and political conditions" which contributed to the low productivity of Indian agriculture, the report mentions the small size of holdings, want of capital, rural indebtedness and defective land tenures.[9] It emphasized the need for detailed scientific investigations on agricultural practices in India, cautioned against the belief that western knowledge and practice could simply be grafted on to Indian practices and argued the case for general as well as agricultural education.

AGRICULTURAL POLICY UP TO 1905

The policy up to 1905 was directed to the strengthening of the departmental organisation on the basis of the recommendations of Voelcker. At the suggestion of the Agricultural Conference held in 1890, J. W. Leather was appointed Agricultural Chemist to the Government of India. The need for development in other directions was also felt soon. In 1901, an Inspector-General of Agriculture, and a Mycologist, and in 1903, an Entomologist were

7 *Vide* Report, pp. 41-42 (Italics in the original).

8 "More wood means more manure, more manures mean more crops and more crops mean an increasing revenue to the State; to the cultivator, it implies more fodder, better cattle and more manure again to ensure the future fertility of the soil." *ibid.*, p. 137.

9 *ibid.*, p. 289.

appointed. About this time Henry Phipps of Chicago offered a donation of £30,000 to Lord Curzon to be applied to some object of public utility, preferably connected with scientific research. This donation was used for the establishment of the Agricultural Research Institute at Pusa in the year 1903. In the meanwhile, there was a series of droughts between 1895 and 1899. The famine of 1899 was "the greatest in extent and intensity which India has experienced in the last 200 years." The famine relief organisation in the Provinces was found inadequate to cope with this emergency.[10] The Famine Commission of 1901 found that "the steady application to agricultural problems of expert research is the crying necessity of the time," and recommended (i) strengthening of the staff of Agricultural Departments in all Provinces, (ii) further legislation on the lines of the Punjab Alienation of Land Act to restrict transfers of land, and (iii) the introduction of co-operative credit societies along German lines. In the meanwhile, ten retired British officials and R. C. Dutt addressed a memorandum to Lord George Hamilton, the Secretary of State, in which they argued that the malady of Indian agriculture was more deep-rooted, and that at the back of it all was the land revenue system.[11] This memorial evoked by way of reply Lord Curzon's famous Resolution of January, 1902, trying to vindicate Government's land revenue policy. The demands made in the memorial were turned down, but this criticism of Government policy did hasten the introduction of reforms.[12] The passing of the Co-operative Societies Act of 1904, the expansion of the Imperial and Provincial Departments of Agriculture in 1905, the constitution of the Indian Agricultural Service in 1906, the rapid expansion of irrigation in the course of the next fifteen years — all these testify to the fact that the problem of Indian agriculture was by now assuming a new significance, that the emphasis was changing from *palliatives* like famine relief, "*takavi*" grants and revenue remissions to more positive measures.

10 Cf. The Commission of 1901 emphasized the lack of real preparation. "In no Province were well considered programmes of public or village works ready at the beginning of the famine." E. Thompson and G. T. Garratt: Rise and Fulfilment of British Rule in India (1935), p. 563.

11 See Thompson and Garratt, *ibid.*, p. 565.

12 *ibid.*

On the whole, by 1905, a certain desire on the part of Government to promote agricultural improvements was discernible. The absence of precise data on which to work was, however, a main handicap. Various Provincial Governments made isolated attempts to promote agricultural research and improvement; but "the magnitude of the problem which confronted them was so great that it was difficult for them to get down to essentials and they had neither the trained staff nor the organisation to carry into effect such recommendations as they were in a position to make."[13] Moreover, the total impression made by the measures mentioned above on the rural economy was small.

WORLD WAR I AND AGRICULTURAL POLICY

During World War I, there was no large change in the agricultural policy of the Government. The years immediately after 1914 were fairly good; but during 1918-19 crops failed almost all over the country leading to severe famine. There was a general rise in commodity prices in India, which moved in sympathy with that of the rest of the world. The existence of a system of control of food supplies and regulation of exports of foodstuffs as also foodgrains imports relieved the situation created by the failure of the monsoon. The Government introduced a rigid system of internal control and a scheme for a proportionate distribution of provincial surpluses. Government machinery for famine relief in India attained a high state of development and organisation through considerable experience and it worked especially smoothly in 1918-19.[14]

PROGRESS SINCE 1919

The Reforms of 1919 transferred to the Provinces the services of agriculture, co-operation, local self-government, public health and sanitation. Though even in regard to these transferred subjects the Central Government had certain powers of superintendence, direction and control, it was no longer permissible "to incur expenditure from Central revenues on Provincial subjects" except on agricultural research and the training of research work-

13 Report of the Royal Commission on Agriculture in India, *op. cit.*, p. 29.

14 D. R. Gadgil: The Industrial Evolution of India in Recent Times, Third Edition (1933), pp. 200-203.

ers in Central institutes. The Provinces, on the other hand, had no real initiative as finance was not under their control. Therefore, except for a considerable extension of irrigation, little progress was noticed in agricultural improvement till the passing of the Government of India Act, 1935 which granted a measure of autonomy to the Provinces.

ROYAL COMMISSION ON INDIAN AGRICULTURE (1928)

The first comprehensive survey of the various problems of agriculture in India was made by the Royal Commission on Agriculture in India. The Report of the Commission (1928) has rightly become the starting point for all further discussions on the subject. By its terms of reference, the Commission was asked to examine and report on the conditions of agriculture and rural economy in British India and to make recommendations for the improvement of agriculture and the promotion of the welfare and prosperity of the rural population. In particular, the Commission was to investigate : (*a*) the measures being taken for the promotion of agricultural and veterinary research, experiment, demonstration and education; for the compilation of agricultural statistics; for the introduction of new and better crops and for improvement in agricultural practice, dairy farming and the breeding of stock; (*b*) the existing methods of transport and marketing of agricultural produce and stock; (*c*) the methods by which agricultural operations are financed and credit afforded to agriculturists; (*d*) the main factors affecting the rural prosperity and the welfare of the agricultural population.

The whole problem of land revenue and land tenure was however excluded from the scope of the Commission's work. This omission detracts considerably from the value of this otherwise comprehensive study. It is also illustrative of Government's piecemeal approach under pressure of events. For how could the promotion of the welfare and prosperity of the rural population be conceived without examining the basic land system of the country, that is the distribution of the ownership of land, the terms on which it is held or cultivated by the different rural classes, the relation of the cultivator to the landlord and to Government, and the whole system of land taxation? The Commission however recognised clearly that "the problem of improving Indian

agriculture was really the problem of improving Indian village life and that this must be studied as a whole."[15] Towards this end, the report contains valuable suggestions which have served as the basis of agricultural improvement since 1928.

One of the most important recommendations of the Commission was regarding the organisation of agricultural research. The object was "to promote, guide and co-ordinate agricultural research throughout India and to link it up with agricultural research in other parts of the British Empire and in foreign countries."[16] Hitherto the various Provincial Departments of Agriculture could undertake only limited activities due to lack of finance and technical personnel. Besides, there was no co-ordination between the departments. The Imperial (now Indian) Council of Agricultural Research was designed to provide effective co-ordination and to act as a clearing house of information, not only in regard to research but also in regard to all general matters pertaining to the development of agriculture and animal husbandry. It would remain in close touch with the Provincial Departments of Agriculture and enlist the support and co-operation of Universities in the furtherance of agricultural research.

The recommendations of the Commission on sub-division and fragmentation of holdings, improvement of livestock, irrigation, marketing, co-operation, rural education and rural reconstruction, in general, aimed at bringing about "greater efficiency throughout the whole field of agricultural production" so as "to render the business of farming more profitable to the cultivator."[17] The Commission emphasized the urgency of widening the outlook of the cultivator himself so that he may become not only a better instrument of production but also a better man. The responsibility of Government was also clearly defined: "We have no hesitation in affirming that the responsibility for initiating the steps required to effect this improvement rests with Government; that the rural problem should be attacked as a whole, and at all

15 Quoted in Sir John Russell: Report on the Work of the Imperial Council of Agricultural Research in Applying Science to Crop Production in India (1939), p. 2.

16 Report of the Royal Commission on Agriculture in India, *op. cit.*, p. 48.

17 *ibid.*, p. 672.

points simultaneously; that the responsibility for framing policy and combining the activities of two or more departments in order to give effect to their policy must remain that of Government and Government alone;" but that, at the same time, "success on a large scale can be rendered permanent only if the sympathy, interest and active support of the general public can be enlisted."[18] This was an excellent enunciation of a new agricultural policy. But, events moved faster than the machinery of government.

DEPRESSION

The Great Depression started in 1929. Its effects were particularly serious in the primary producing countries though the industrial countries also suffered heavily. Industrial production could adjust itself relatively more easily to the new conditions. The fall in prices of industrial commodities was therefore comparatively less and the process of recovery started earlier. Agricultural prices fell precipitately, and rural incomes suffered drastic reduction.

The rise in prices of agricultural commodities after World War I had not been so great as that in industrial products. Further, many agricultural countries were debtor countries which had borrowed heavily in the past at high rates of interest and the payment of interest charges strained their balance of payments. The need for drastic remedial measures was widely recognised. The highly industrialised countries were faced with unemployment on an unprecedented scale. They took steps to arrest the fall in prices to lessen the intensity of the depression. The measures taken included restrictions on imports, reduction in wages, slowing down of production, destruction of surpluses, price supports and various monetary and fiscal devices to prop up the economy. There was considerable rethinking on basic policies, and, in the United States, a series of bold reflationary measures were taken in hand as part of the 'New Deal.'

INDIA AND THE DEPRESSION

In India the depression had very adverse effects on the entire population as agriculture dominated the whole economy. As in

18 Report, *op. cit.*, pp. 672-673.

other countries, the prices of farm products fell more than those of industrial products. Between September 1929 and December 1934, the price of rice and wheat declined by 47 per cent and 45 per cent respectively, whereas the decline in prices of cotton and jute manufactures was only 26 per cent and 38 per cent respectively. The overall decline in prices of all commodities was 38 per cent.[19]

The disparity between the fall in prices of agricultural products and in those of finished goods was also reflected in the price levels of our exports and imports. The former consisted mainly of raw materials and food products and the latter of manufactured goods. Between 1928-29 and 1933-34, the price level of exports declined from 97.5 per cent to 53.5 per cent and those of imports fell from 96.4 to 63.5 per cent during the same period.[20]

As a result of the catastrophic fall in prices of agricultural products, the gross money incomes in this sector are estimated to have declined by about 50 per cent in 1933-34 as compared to 1929-30.[21] According to the estimate made in the Review of the Trade of India, the value of principal crops in British India declined from Rs. 1,021 crores in 1928-29 to Rs. 474 crores in 1933-34 — a fall of nearly 53.6 per cent. This was not accompanied by a similar fall in the costs incurred by the agriculturists, for, while some elements in such costs are elastic, others such as interest charges and land revenue were more or less fixed and could not be brought down. The net money incomes of the farmer must, therefore, have fallen by more than 50 per cent. The payment of Government dues absorbed an increasing proportion of the farmer's depressed income. Although suspensions or remissions of land revenue were granted on a considerable scale, there was in this period a lowering of the farmer's standard of living and an increase in his indebtedness.

19 Review of the Trade of India, 1932-33, p. 8 and 1934-35, Department of Commercial Intelligence and Statistics, India.

20 Review of the Trade of India, 1936-37, p. 22.

21 This is testified by the various Provincial Banking Enquiry Committees' Reports and several village studies during the period. *Vide* J. C. Kumarappa: A Survey of Matar Taluka (Kaira District), Gujarat Vidyapith Economic Series (1931), p. 139.

GOVERNMENT MEASURES IN INDIA

The Government of India took the view that the depression was due to world causes and that little could be done to counteract its effects. While other countries initiated an expansionist policy under state direction and control, the authorities in India adhered to 'orthodox' principles of currency and public finance and concentrated their energies on balancing the budgets and maintaining the exchange ratio. No systematic steps were taken either to increase exports or to decrease imports. The Ottawa Pact with its principle of Imperial Preference was more a concession to Imperial Policy than an effort to improve the export trade of India. The Mody-Lees Pact was in the nature of a political gesture of goodwill to Lancashire interests. The de-linking of the rupee with gold brought little benefit as it was followed by the linking of the rupee to sterling at the old rate. The deflationary policy followed during the depression resulted in a high rate of interest in the earlier stages and a larger outflow of gold thereafter. The International Restriction Schemes applied to India only in respect of tea and rubber; in jute, an effort was made to persuade the cultivator to restrict cultivation. In sugar, the minimum price was guaranteed to sugarcane growers in the U.P. Barring these isolated items, no comprehensive scheme for improving agricultural incomes was taken up. The fixed charges of the farmer remained at the same high level and except in the C.P., (now Madhya Pradesh), no effort was made to reduce them by scaling down debts or by lowering rates of interest. Expenditure on social services like health and education and on development was curtailed. Instead of enlarging public works programmes, Government actually cut down such expenditure by about 33 per cent.

WORLD WAR II AND INDIAN AGRICULTURE

World War II involved for the belligerents a total mobilisation of resources, agricultural as well as industrial, towards the single end of military success. The European countries set about this objective with determination. In India, however, only piecemeal changes were introduced in all sectors as circumstances pressed. The impact of war on India's agrarian economy was clearly visible in two spheres: crop pattern and prices. The war

deprived India's staple commercial crops of their export markets. The commodities most affected were jute, groundnut, and cotton, the decline in exports between 1938-39 and 1940-41 in each of these being of the order of 64 per cent, 62 per cent and 18 per cent respectively.[22]

Cultivators, on the other hand, inspired by the hopes of increasing prosperity as the war continued, were extending the cultivation of most of the commercial crops. The steep decline in exports against the expansion in production resulted in large surpluses of these commodities.

A decidedly opposite trend was noticeable in respect of food crops. India was called upon to supply large quantities of wheat to the Near East, as imports from other countries became difficult for lack of shipping space. The requirements of the military augmented the demand in India itself. As the war spread to the East, imports of rice from Burma ceased altogether. This resulted in a serious shortage of foodgrains. With Japan's entry into the war, India lost her most important market for short staple cotton.

Effect on Crop Pattern

These events necessitated a change in India's crop pattern in the direction of a large diversion from non-food crops to food crops. This process was influenced both by the regulatory measures of Central and State Governments and by changes in relative prices. The area under foodgrains increased from an average of 193 million acres for the triennium ending 1938-39 to the peak of 226 million acres in 1944-45, *i.e.*, by about 17 per cent, with a decline to 219 million acres in 1945-46. While the wheat acreage was steady, the area under rice increased by 10.1 million acres or 13.7 per cent. The largest increase was under *kharif* cereals, *viz.*, jowar, bajra, maize, barley and *ragi* which increased by 19.6 million acres or 28.1 per cent. The area under gram increased by nearly 2 million acres. During the same period, the area under cotton declined by 9.8 million acres and the area under jute by 0.9 million acres, representing a decline of about 40 per cent and

22 Review of the Trade of India, 1941-42, Government of India (1943), pp. 12-13.

28 per cent respectively.[23] The area under groundnut and sugarcane showed some increase as after the Japanese occupation of the Dutch East Indies, the Philippines and Malaya, the demand for Indian groundnut revived. Sugarcane production went up in response to rising internal demand.

Changes in output were much smaller than in acreage. The production of foodgrains during the period increased by 9 per cent, against a decline in the production of cotton and jute of 37 per cent and 26 per cent respectively. There is no positive evidence of a perceptible increase in agricultural production as a whole. According to official estimates, the total production of 19 principal agricultural commodities, expressed as a percentage of the average during the base period 1934-35 to 1938-39, showed a fall to 92.58 in 1945-46. For the eight commodities comprised in the foodgrains group, the index was 92.49.[24] Except for the years 1942-43 to 1944-45, the general trend appeared to be downwards.

Price Trends

The change in crop pattern was associated to some extent with the change in relative prices. The price movements were favourable to a substitution of food crops for non-food crops, but in the general upward trend, there were erratic relative changes from time to time. The correlation between shifts in relative prices and production trends within the group of agricultural commodities since 1939 has been obscured by the upward movement in the general level of prices and the working of regulatory measures for price adjustment.

A significant feature of the price changes during the war period was an improvement in the terms of trade between agriculture and industry. By the end of the war, the general index of prices was close to 250. The index for agricultural commodities had risen to about 270, while that of manufactured articles was about 240. After 1945-46 the prices of agricultural commodities

23 Estimates of Area and Yield of Principal Crops in Undivided India, 1936-37 to 1945-46, Directorate of Economics and Statistics, Ministry of Agriculture, Government of India (1949), pp. 10-13.

24 *Agricultural Situation in India*, Vol. III, No. 10, January, 1949, p. 54.

rose relatively less than those of manufactured goods, the increase in the prices of the former group being about 15 per cent.

In evaluating the effects of the rise in agricultural prices on the rural community, the background of the agricultural situation in the inter-war period should be kept in mind. The disastrous effects of the earlier depression on agricultural prices have already been indicated.[25] While it is generally true that a period of high agricultural prices raises rural incomes the benefits are not evenly spread.

The fall in the purchasing power of the rupee in the war and post-war period reduced the real burden of rural debt. Even here, the larger land holders benefited more than the rest. The Review of the Co-operative Movement on the credit side indicated that "the main effect of the increase in agricultural prices has been to improve the repaying capacity of the borrower and not so much to reduce his need for fresh finance which, on the other hand, has risen with the cost of cultivation and maintenance."[26] The materials required for farming operations were in short supply; costs of cultivation rose progressively; while rural wages rose only moderately.

It is probable, on the whole, that the bulk of the gain accrued to large land holders and traders in rural areas. The lesson of war-time experience, clearly, is that broad-based rural prosperity is not a matter of relative price and income adjustments; such prosperity can come only from increased productivity.

The Partition of the country in August, 1947 was a violent shock to the economy. It aggravated the disequilibrium brought about by the war-time dislocation. Apart from the immediate and unprecedented movement of displaced persons from one side

25 The view was widely held that for the ten years or so before 1939, the Indian agriculturist had a 'raw deal' owing to the drop in prices of agricultural produce since the slump of 1929, that he had been selling his crops below the real cost of production and that he had greatly deteriorated in his finances and his scale of living. This had been to some degree recognised by the Government of India in imposing an import duty on wheat in 1930 and in giving protection to the sugar industry in 1932. Sir Henry Knight: Food Administration in India, 1939-47 (1954), pp. 34-35.

26 Review of the Co-operative Movement in India, 1939-46, Reserve Bank of India (1948), p. 8.

of the border to the other and the consequent disruption of economic life over wide areas, the most serious effect on the Indian Union was a relative weakening of the agricultural potential. In the immediate transition period, Partition made India a large importer of food and raw materials. The first priority in India's economic planning for the next few years has, therefore, to be on making good this deficiency.

PLACE OF AGRICULTURE IN FIVE-YEAR PLANS[27]

With the initiation of the Five-Year Plans, agricultural policy in general has come to be viewed in the broader context of the development of the economy as a whole. The emphasis is as much on a diversification of the economy as on development of agriculture as such or on the improvement of conditions in rural areas. This involves an integrated view of the economy as a whole. We may briefly review the views of the Planning Commission as stated in the successive Five-Year Plans on the question of agriculture's role in economic development. Writing about the pattern of priority in the First Five-Year Plan, the Planning Commission states that "the conception of priorities over a period has to be a dynamic one, the emphasis as between different sectors shifting as development in those taken up initially prepares the ground for development in others."[28] Having laid down this broad principle, the Planning Commission proceeds to state: "For the immediate five-year period, agriculture, including irrigation and power, must in our view have the top-most priority. For one thing, this emphasis is indicated by the need to complete the projects in hand, and further we are convinced that without a substantial increase in the production of food and of raw materials needed for industry, it would be impossible to sustain a higher tempo of industrial development. In an under-developed economy, with low yields in agriculture, there is of course no real conflict between agriculture and industrial development. One cannot go far without the other; the two are complementary. It is necessary, however, on economic as well as on other grounds, first of all to strengthen the economy at the base and to create conditions of

27 M. L. Dantwala, "Economic Development and the Role of the Agricultural Sector in India," Paper submitted to the ECAFE in 1964.

28 First Five-Year Plan, Planning Commission, Government of India (1953), p. 44.

sufficiency and even plentitude in respect of food and raw materials."[29] Consistent with this approach, of the total Plan (revised) outlay of Rs. 2,356 crores, as much as 15.1 per cent was allocated to agriculture and community development and 28.1 per cent to irrigation and power (16.3 per cent to irrigation, 11.1 per cent to power and 0.7 per cent to flood control, etc.) as against 7.6 per cent for industry and mining (6.3 per cent for large and medium industries and 1.3 per cent to small industries). It should, however, be mentioned that the Planning Commission held the view that at that stage the progress in industries, especially large-scale industries, would have to depend, to a great extent, on effort in the private sector, while the State would concentrate on the provision of basic services like power and transportation. Though it was stated that the State had also "special responsibility for developing key industries like iron and steel, heavy chemicals and manufacture of electrical equipments without which development in the modern world is impossible," no significant allocation was made for the development of these key industries in the public sector.

Agricultural production during the First Five-Year Plan increased substantially though in retrospect it appears that the bulk of it was due to the increase in the acreage and to good weather conditions. The comfortable situation on the agricultural front induced the Planning Commission, while formulating the Second Five-Year Plan, to shift the emphasis towards industrialization. One of the major objectives of the Second Five-Year Plan was stated to be "rapid industrialization with particular emphasis on the development of basic and heavy industries."[30] The other objectives mentioned in this context were a sizable increase in national income, a large expansion of employment opportunities and reduction of inequalities in incomes and wealth, but there was no specific mention of the development of agriculture. Arguing the case for rapid industrialization, the Commission stated: "Low or static standards of living, under-employment and unemployment, and, to a certain extent, a gap between the average and the highest incomes are all the manifestations of basic under-development which characterises an economy dependent mainly on

29 *ibid.*

30 Second Five-Year Plan, Planning Commission, Government of India (1956), p. 24.

agriculture. The core of development is thus rapid industrialization and diversification of the economy. But, for industrialization to be rapid enough, basic industries like iron and steel, non-ferrous metals, coal, cement and heavy chemicals as well as industries which make machines for making machines have to be developed rapidly."[31] The criterion for investment resources was to be not merely immediate needs; but also the expanding needs as development went forward. The approach of balanced growth was not given up. It was stated that balanced pattern of industrialization requires well-recognised effort to utilise labour for increasing the supplies of much needed consumer goods in a manner which economises the use of capital.

Consistent with this view, the percentage of the developmental outlay (of Rs. 4,800 crores) allocated to industry and mining was increased to 18.5 per cent (from 7.6 per cent in the First Five-Year Plan) and that for agriculture and community development was reduced to 11.8 per cent (from 15.5 per cent in the First Plan). There was a similar reduction to 19 per cent from 28.1 per cent in the outlay allocated for irrigation and power. The targets of agricultural production for the Second Five-Year Plan were also relatively modest. For example, the production of foodgrains was to be increased from 65 million tonnes in 1955-56 to 75 million tonnes in 1960-61, an increase of 10 million tonnes in the five years of the Second Plan, as against an increase of 14 million tonnes achieved during the First Five-Year Plan. Soon after, however, it was realised that the target for foodgrains production in the Second Five-Year Plan was rather low and the same was raised to 81.8 million tonnes without, however, making any addition to the financial allocation for agricultural development.

Though in the last year of the Second Plan, foodgrains production just exceeded the revised target, in the preceding years, shortages were experienced resulting in substantial increases in foodgrains prices. The Third Plan, therefore, restored the primacy of agriculture in its development programme. Unlike in the Second Plan, the achievement of self-sufficiency in foodgrains and increased agricultural production to meet the requirements of

31 *Ibid.*, p. 25.

industry and export found place in the principal objectives of the Third Plan. It was stated that in the scheme of development during the Third Plan, the first priority necessarily belonged to agriculture. The experience in the first two Plans and especially in the Second, had shown that the slow rate of growth in agricultural production was one of the main limiting factors in the progress of the Indian economy. This, however, did not imply relaxation of emphasis on the development of basic and heavy industries. As a matter of fact, there appears to be a certain degree of ambivalence regarding the relative importance of agriculture and industry. On the one hand, it was stated that "the development of agriculture based on utilisation of manpower resources of the countryside and the maximum use of local resources holds the key to the rapid development of the country;" on the other, it was also stated that "there is no doubt that industry has a leading role in securing rapid economic advance."[32] This was sought to be reconciled by the statement that "the growth of agriculture and the development of human resources alike hinge upon the advance made by industry. Not only does industry provide the new tools but it begins to change the mental outlook of the peasant."[33]

Allocation of the financial outlay to the different sectors in the Third Five-Year Plan does indicate a slight shift in favour of agriculture. Thus, the share of agriculture and community development in the total financial outlay was increased from 11 per cent in the Second Plan to 14 per cent in the Third, while the percentage allocated to major and medium irrigation remained constant at 9. Similarly, the percentage share of organised industry and minerals also remained constant (20 per cent) for the Second and the Third Plans. It was further stated that "in formulating agricultural production programmes for the Third Plan, the guiding consideration has been that the agricultural efforts should not be impeded in any manner for want of financial or other resources. Accordingly, finance is being provided on a scale which is considered adequate and the further assurance is given that if for achieving the targets of production additional resources are found necessary, those will be provided as the Plan proceeds."[34]

32 Third Five-Year Plan, Planning Commission, Government of India (1961), pp. 23-24.
33 *ibid.*, p. 7.
34 *ibid.*, p. 304.

During the first two years of the Third Plan, progress of agricultural production was very unsatisfactory and when national emergency was declared, after the invasion of the Northern Frontier, the National Development Council in the year 1963 sanctioned supplementary allocation for minor irrigation and soil conservation.

Viewing the three Five-Year Plans together, it can be stated that the only period during which the importance of agricultural development was not sufficiently appreciated was at the time of the formulation of the Second Plan. It may be perhaps more appropriate to say that during this period the importance of basic and heavy industries in national development came to be emphasized for the first time. This was interpreted as 'neglect' of agriculture. In this connection, it is important to mention that allocation of only 6.3 per cent of the total financial outlay during the First Plan to the development of large and medium industries in the public sector was altogether too meagre and its step-up to 14.4 per cent in the Second Plan was, in a way, a correction of the 'neglect' of industrial development in the First Plan. It is interesting to note that in retrospect, even the critics of the heavy industry bias of the Second Plan agree that it would have been worthwhile to have endeavoured to establish a steel plant during the First Plan.

The record of the Third Plan, particularly in the agricultural and allied sectors has been quite disappointing, in spite of the step-up in the total financial outlay from the original provision of Rs. 7,500 crores to about Rs. 8,630 crores. The last year of the Plan coincided with one of the worst droughts and production fell to a level of 72.3 million tonnes. An appraisal of the Plan made by the Planning Commission in 1963 brought into sharp focus the deficiencies in Plan formulation and implementation, particularly in the agricultural sector. It pointed out that "Although lapses occurred in agriculture itself, part of the failure was due to the inability of industry to supply the targeted output of fertilizers. Partly also, it was the absence of an agricultural oriented policy on the part of the authorities in charge of the distribution of power."[35] It emphasized that "In preparing an agricultural

35 Fourth Five-Year Plan — A Draft Outline (1966), pp. 172-173 and the Third Plan Mid-term Appraisal, Planning Commission, Government of India (1963).

plan, attention has, therefore, to be given to a host of supporting activities which are essential to agricultural development. If "top priority" for agriculture in the Fourth Plan is to be really meaningful and effective, it is not only necessary to bring together the various targets and programmes in the agricultural sector but also to identify and give preference to those activities in other sectors which bear on the implementation of the agricultural Plan." In the formulation of the draft Fourth Plan, highest priority has been given to programmes for increasing agricultural production. "Necessary financial outlays have been provided, industrial planning has built into it a high priority for the physical inputs needed by agriculture such as fertilizers, pesticides, agricultural implements, etc."[36] Of the total financial outlay of Rs. 2,221 crores and Rs. 2,246 crores in the Annual Plans for 1966-67 and 1967-68 respectively,[37] the agricultural sector accounted for 15.6 per cent and 16.7 per cent and irrigation for 6.5 per cent respectively. The percentage allocation to organised industries varied little; it was 23 per cent in 1966-67 and 24.4 per cent in 1967-68.

In this connection, it is necessary to emphasize that it is inappropriate to judge the priorities accorded to different sectors only by reference to the composition of planned public outlay or investment. Apart from the considerable non-monetised investment particularly in the agricultural sector, so characteristic of under-developed economies, the quantum of private investment in different sectors constitutes an important component of the total investment on which the ultimate output would depend. According to the estimates given in the Third Five-Year Plan, during the First Five-Year Plan (1951-56), the private sector investment came to Rs. 1,800 crores as against Rs. 1,560 crores of public sector investment. The corresponding figures for the Second Five-Year Plan (1956-61) are Rs. 3,100 crores and

36 *ibid.*, p. 30.

37 The outlays proposed in the draft Fourth Plan are not strictly comparable with those for earlier Plan periods on account of the devaluation of the rupee on June 6, 1966 and the rise in the general price level. It is now proposed to launch the Fourth Five-Year Plan from April, 1969 to March, 1974. The interregnum of three years between the end of the Third Plan and the beginning of the Fourth Plan is proposed to be covered by Annual Plans, implemented according to the availability of resources rather than the targets specified.

Rs. 3,650 crores, and for the Third Plan (1961-66) Rs. 4,100 crores and Rs. 6,300 crores. It may also be noted that private investment in agriculture came to Rs. 625 crores during the Second Plan and Rs. 800 crores during the Third Plan as against public investment of Rs. 210 crores and Rs. 660 crores for the corresponding Plan periods. In the case of major and medium irrigation, however, as would be expected, there was no private investment against an investment of Rs. 420 crores and Rs. 650 crores by the public sector during the Second and Third Plans respectively.[38] Further, as has been rightly pointed out, "the only way of judging whether a development plan is well-balanced is by considering the flow of *output* of the various goods and services: investment is simply *one* means of securing this balance, and the character of the development cannot be judged by the way in which this one means is allocated between various industries. The capital expenditures are a very important means of helping to attain this output, but they are not objectives in themselves. If some other method of raising output could be discovered during the Plan period (*e.g.*, by the use of better seeds instead of costly irrigation schemes), then the essence of the Plan can be fulfilled even if the capital expenditure were far below the original figures."[39]

Professor Reddaway has elaborated this point thus:[40] "A five-year plan normally shows two main sets of figures: targets for the outputs of various commodities which should be attained in the last year of the plan, and plans for capital expenditure to be done in the whole period of the plan. Of these two, the capital expenditure is the thing which calls for direct and immediate action, and it tends therefore to be regarded as the essence of 'the Plan'. This is, however, to mistake the means for the objective: the fundamental *objective* of the Plan is to attain the higher levels of output, and it is these levels of future output which have to be kept in balance as between one product and another, if the plan is to be a coherent one." He further observes: ". . . . . it was inevitable that investment should show a bigger

38 *ibid.*, pp. 32-33 and 59, and Fourth Five-Year Plan — A Draft Outline, *op. cit.*, p. 42.

39 W. B. Reddaway: The Development of the Indian Economy (1962), pp. 161 and 189.

40 *ibid.*, p. 189.

percentage for the industrial sector — and more particularly for heavy industry — than one will find in the increment of output: amongst other reasons, we may note the following:

(*a*) The other factors which raise output besides investment — notably 'better methods in existing productive units' — can make a substantial contribution in agriculture and in the more established types of other activities (including services); in heavy industry or power, on the other hand, output has to be expanded essentially by building new units.

(*b*) The long time-lag between investment and output in heavy industry requires apparently 'disproportionate' investment in it when the process of development is starting or accelerating.

(*c*) In so far as additional output is obtained by building new units, the higher capital-output ratio in heavy industry inevitably makes its share of investment higher than its share in the resultant increase in output. This is not, of course, a reason for deciding to increase the output of heavy industry rather than some other type of output — quite the reverse; but if it is *necessary* to increase the output of heavy industry (as may above all apply in the case of power) then the large allocation of investment to that purpose follows inevitably."

APPROACH AND NEW STRATEGY FOR AGRICULTURAL DEVELOPMENT

Up to the end of the Second Plan, the approach to agricultural development consisted mainly in formulating general programmes of development for the creation of additional facilities, such as irrigation, soil conservation, land reclamation and development, and measures for increased distribution of material inputs, such as fertilizers, improved seeds, etc. It was expected that these measures would result in creating additional production potential. The targets of production were prescribed for different crops, taking into account the additional production potential thus expected to be created over assumed based levels. Special programmes for commercial crops were also drawn up, taking

into account the special problems of each crop. Efforts were, however, generally dispersed all over the areas growing the respective crops. The principle of concentration of efforts in selected areas and of adoption of package of practices was first tried under the Intensive Agricultural District Programme, otherwise known as the Package Programme, initiated in 1960-61. This principle has been extended, as discussed in an earlier chapter, to Intensive Agricultural Areas Programme drawn up during 1962-63 in respect of rice, millets, pulses, cotton, oilseeds and sugarcane and later extended to wheat and jute.[41]

It has been suggested that the broad objective of agricultural development should be to double agricultural production over the period 1961-76 and also to diversify the economy, with increased emphasis on development of animal husbandry, dairying, fisheries and forestry programmes.[42] The aim should be to make rapid strides towards the achievement of a balanced and nutritive diet, reducing the existing high cereal component of the diet. Elaborating these objectives, it is observed that "the production of commercial crops should be increased to provide the raw materials for industry and exports. The forestry programmes should aim at conservation and exploitation of forest resources to provide the wood and timber for domestic and industrial uses. A proper balance should be struck between the various uses of land for cultivation of crops, fodder and forestry. The cropping programmes and practices should aim at building up of the soil fertility. The cultivation of crops should not only ensure optimum production but also secure for the farmer an adequate return for his labours. The intensive cultivation practices of irrigation, use of improved seeds, fertilizers and manures, application of plant protection measures should be so designed as to build up a technologically progressive and economically prosperous agriculture."[43] All this implies that the agricultural production programme has had to be revitalised. In the context of the successive years of drought, a new strategy or approach

41 Approach to Agricultural Development in the Fourth Five-Year Plan, Ministry of Food and Agriculture, Government of India,, 1964 (1966), p. 15.

42 *ibid.*, p. 12.

43 *ibid.*

to the problem of agricultural development is needed extending the principle of concentration of efforts in areas suitable for crop and livestock production.

The New Strategy for agricultural development was adopted in 1966-67 to facilitate greater application of science and technology for increasing productivity in agriculture and allied fields in the years ahead.[44] This strategy aims at securing rapid increase in food production in the shortest possible time and lays down certain priorities among the measures being taken under the comprehensive agricultural development programme. The circumstances favouring the adoption of the New Strategy are: (i) the success and availability of high-yielding exotic and hybrid varieties of seeds, (ii) the keenness of the farmers to use chemical fertilizers, (iii) responsiveness of the farmer to the adoption of new and complex techniques and the recent experience of intensive cultivation in selected, compact areas on the lines of the package programme. The adoption of the New Strategy has led to the decision that self-sufficiency in foodgrains should be achieved by 1970-71 and that after 1971, no further concessional imports of wheat would be sought. The programmes of agricultural production for 1967-68 have been drawn up in the light of this objective.

The principal elements of the New Strategy adopted for increasing agricultural production include (*a*) applying a package of practices comprising water management, high-yielding varieties of seeds, pest control and a sufficiency of fertilizer application along with good cultural practices — reaching an area of 32.5 million acres in 1970-71; (*b*) introducing short-term varieties in the major cereals of the country which are as good yielders as the long duration varieties under a suitable package of practices. This would allow for the growing of a major second crop in the irrigated areas of the country where previously one crop was being grown under irrigated conditions. This programme is expected to reach 30 million acres in 1970-71. Other important elements of the New Strategy are: intensive cultivation of subsidiary food crops and commercial crops through the adoption of a package

44 *Vide*, Report 1966-67, Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture), Government of India (1967), pp. 1-5, 14-20 and 81-90.

of improved practices, new concepts of irrigation, ayacut development and water management, organised provision of the main farm inputs, farmers' training and education and applied adaptive agricultural research.

The core of the new approach is the planned and systematic cultivation of high-yielding strains of paddy, wheat, jowar, bajra and maize in selected areas having assured irrigation or rainfall. An account of this programme is given in Chapter V.

Measures are being taken to identify the areas and participant farmers and to tie up the programmes of production and supplies of inputs. In the area covered by this programme, special efforts are proposed to be made to introduce the crop loan system under which loans are given to the cultivators on the basis of the production needs of each type of crop in lieu of the landed assets of the borrowers. It provides that loans for supply of material inputs should be advanced only in kind and that attempt should be made to link credit with marketing. It is also proposed to simplify the procedures for the grant of loans in order to avoid unnecessary delays. Farmers' training is now proposed to be treated as an integral part of this programme over and above the general extension work in agriculture.

Multiple Cropping and Short-Term Crops

To supplement the High-Yielding Varieties Programme, a programme of multiple cropping is proposed to be taken up from 1967-68 in areas having sufficient irrigation potential. The principal tasks are: identification of areas to be covered by the programme, identification of short duration crops and proper crop rotations and arrangements for provision of agricultural supplies necessary for producing additional crops. During 1967-68, 7.5 million acres are proposed to be covered by multiple cropping. Originally, it was contemplated that multiple cropping programme might include only short duration improved varieties of paddy, maize, jowar, bajra and wheat but the States have also included other crops like barley, *ragi*, oilseeds, potatoes and vegetables under the programme.

The most important aspect of scientific agriculture particularly the introduction of high-yielding varieties and short duration

varieties of crops is the greatly expanded use of inputs like fertilizers, pesticides, improved seeds, credit, etc. Various measures are being taken to ensure the availability of inputs to the cultivators in required quantities and at the required time. Policies regarding the development and efficient exploitation of water resources have also received a new orientation. There is greater emphasis on minor irrigation schemes, including ground water development, as the benefits of minor irrigation are likely to be spread more evenly over the country and realised more quickly. Better utilisation of installed irrigation capacity is proposed to be secured through a programme of ayacut development.

An important aim under the New Strategy is to obtain maximum production from the irrigated areas. It envisages that the production of irrigated areas is raised to about 72 million tonnes from about 80 million acres of irrigated area under foodgrains in 1970-71. This leaves a balance of 48 million tonnes out of the target of 120 million tonnes of foodgrains fixed for 1970-71 to be achieved from unirrigated areas.

The break from traditional to scientific agriculture is undoubtedly not easy. The farmer's response to the new technology is most encouraging in terms of his willingness not only to try new varieties of seed and to use large amounts of fertilizer but also to undertake supplementary investments in wells, pumping sets and the like, including land improvements. The successful implementation of the New Strategy for agricultural developments rests ultimately in maintaining a close liaison between the Department of Agriculture at the Centre and the States in the formulation of action programmes, ensuring supplies and removing bottlenecks or delays in the implementation of agricultural development programmes. No less essential are the adoption of supporting programmes of agricultural research, price support policies and attention to the development of infra-structure like storage facilities including cold storages, and adequate arrangements for processing and marketing.

CHAPTER VIII

LAND TENURE AND LAND REFORMS

GENERAL CONSIDERATIONS

The ownership of land and the nature of rights and obligations between the members of the rural community arising as a consequence of the utilisation of land are the product of a long evolution determined by the geographical, economic, social and political conditions and circumstances of the community. The complex of land tenures and tenancies which arises as a result of this process affects vitally the efficiency of cultivation and the distribution of produce of the land.

Whether the State recognises private ownership in land; whom it recognises as owner and on what terms; whether the owners actually cultivate the land or whether they hire it out to tenants; on what terms these latter are called upon to work; these are the factors which determine the structural basis of the country's agricultural economy. If this structural basis is unsound, attempts to secure agricultural improvement cannot succeed. The State has to take into account all these vital questions and help in bringing about necessary changes in respect of tenures and tenancies so as to ensure that the land system does not hamper but promotes agricultural progress.

In India, the land problem did not receive, until the post-Independence period, the attention it deserved. Various economic and social factors combined to produce an inefficient and exploitative land system which sapped initiative, hampered economic progress and led to inequitable distribution. The land problem has been at the root of many of the deficiencies and drawbacks of Indian agriculture. A reform of the land system has, therefore, to be an integral part of the problem of agricultural improvement and rural reconstruction.

EVOLUTION OF THE LAND TENURE SYSTEMS

The systems of land tenure in India, as it existed before the reforms, may be broadly classified into three divisions: (i) the

Zamindari, (ii) the Mahalwari and (iii) the Ryotwari. We shall outline briefly the evolution of these systems and the growth of diverse interests and classes on the land.

THE PERMANENT SETTLEMENT — ZAMINDARI

As the East India Company established its political domain in one part of the country after another, it had to evolve some system of dealing with the landed interests. But this was no simple task for the Company as it found itself confronted with long-established customs and usages. The officials of the Company, however, had little interest in anything beyond the extortion of the maximum amount possible from the agriculturists, and naturally they took the line of least resistance by recognising the existing arrangements, or adopting new ones, where necessary, in order to make sure of their own receipts. The system of land revenue then prevailing generally dated far back to the days of the Hindu Kings prior to the Moghul rule, a system under which the King was entitled to one-sixth of the gross produce as measured by the actual product gathered on the threshing floor. In the days of Sher Shah and Akbar, certain reforms had been introduced, such as a cadastral survey, and the payment of revenue in cash or in kind at the option of the cultivator, the amount being determined in view of a variety of factors including the fertility of the soil. In the latter days of the Moghul Empire, the collective assessments superseded the methods favoured by Sher Shah and Akbar.[1] Settlements were made with the provincial chief or any person in authority for a fixed annual revenue and the imperial share was raised to half the produce of the land. This led to the oppression of the peasantry by the revenue farmers who extorted from the cultivators as much as they could, and there were cases of women and children being sold as slaves for defaults in payment of revenues. The East India Company also farmed out the revenues to older zamindars and chiefs in Bengal, Bihar and Orissa. Warren Hastings tried temporary or short-term settlements, but the system had disastrous results. Ultimately came Lord Cornwallis's Permanent Settlement in Bengal, based on the analogy of English

1 Radhakamal Mukerjee: Land Problems of India (1933), p. 324. It is interesting to compare in this connection the description of this system as given by M. Azizul Huque in his work, The man Behind the Plough (1939), Chapter XIV.

conditions, but involving in fact an unwarranted revolutionary interpretation of ownership rights, the consequences of which were felt till recently. The zamindars who were originally agents of Government and, therefore, under the supervision of Government were declared full proprietors of the areas over which their revenue collection extended. The assessment was fixed at about 10/11ths of what the zamindar received as rent from ryots, the balance of one-eleventh constituting the zamindar's remuneration. The revenue liability was fixed in a rough-and-ready manner without any survey of landed rights and interests or any investigation into the productive capacity of the different classes of soils. The intention of protecting the tenants as well was never made effective. The landlords became a functionless and parasitic class interested only in getting the maximum of rent from the peasants, and Cornwallis's dream of creating in Bengal a beneficent landlord-capitalist system resting on the contentment of the cultivator failed to materialise. It took three-quarters of a century for the iniquity of the position to become apparent. It was only after 1859 that attempts were made to grant protection to the cultivator by means of tenancy legislation.

In Other Parts of India

In the meanwhile, steps were taken to extend the Permanent Settlement to other parts of the country as the Directors of the Company were favourably impressed by the regularity with which revenues poured in from Bengal under that Settlement. The system was applied to Benares, to North Madras and certain parts of South Madras, but difficulties were encountered as soon as it was sought to be introduced in the rest of South Madras. In the major portion of the Presidency, the villages were of the ryotwari type, and the officials of the Company, under instructions from the Court of Directors, tried to group together these villages artificially and to sell the landed rights therein to the highest bidders who were then to become the landlords of the whole estate. The attempt failed miserably and had to be given up in favour of the ryotwari system. The question of extending the Permanent Settlement came up for discussion even after the abolition of the Company's rule, but Government had learnt by experience and turned down firmly all proposals for a further extension of the system.

It is perhaps pertinent to observe here before leaving this topic, that two issues have often been mixed up in the controversies on the subject. One refers to the period of Settlement, that is, whether the share of the State is to be settled in perpetuity or only for a definite period; the other is as to who should be recognised as the owner of the land and who should therefore be dealt with by the State directly — the cultivator himself or some intermediary. It has happened as a matter of historical accident that the Permanent Settlement has been associated with the zamindari system of tenure. There is, however, no necessary connection between the two. Permanent Settlements even with ryots individually are conceivable, and were in fact contemplated by the originators of the ryotwari system. On the other hand, we may also have a system of temporary settlements with zamindars. An illustration of the latter is the Malguzari system in the former C.P. The Malguzars were revenue farmers under the Peshwas. They had no proprietary rights in the land. But, the British Government recognised them as owners and heads of villages and made them responsible for the payment of land revenue, the only difference in this case as compared with that of the landlords in Bengal being that the settlements here were temporary. Besides these zamindari systems in Bengal, U.P., parts of Madras and of C.P., there were several other zamindari types of tenure in India, such as, for example, the *Talukdari* system in parts of North Gujarat and the *Khoti* system in the Konkan. The land revenue assessment and administration in these cases were governed by special Acts. Although there are differences in detail in the working of these various types of tenures, the problems arising under all forms of zamindari systems are, broadly speaking, similar, and it is not proposed here to examine all these systems in detail.

THE MAHALWARI SYSTEM

The principles of the Mahalwari or joint village system which was first adopted in Agra and Oudh and later extended to the Punjab were laid down in Regulation IX of 1833.[2] It was recognised in these cases that the villages concerned were units by themselves, the ownership of property was joint or communal, and

2 R. C. Dutt: Economic History of India in the Victorian Age (1903), Seventh Edition, 1950, p. 34.

that it was not possible therefore, to work out here a settlement with individual landlords as in the case of Bengal. Hence, these villages or Mahals, were settled with directly, though a co-sharer of standing was generally selected to undertake the primary liability of paying the land revenue. There were variations in detail as between the different parts of the country under this system, variations in regard to the procedure and period of settlement and the land revenue assessed. The State demand varied from 40 to 70 per cent of the rental. Whatever may have been the original intention of those who advocated and introduced the Mahalwari system based on the recognition of the joint character of the village community and the common rights in lands attached to the village, it led to the break-up of the old village community and the growth of an un-co-ordinated individualism.

THE RYOTWARI SYSTEM

We now go on to trace the evolution of the third type of land system in India — the Ryotwari system, under which the individual ryot is dealt with directly by the State. This system was first introduced in the districts of Baramahal in Madras by Captain Read and Thomas Munroe in 1792, and was gradually extended to other parts of the Province and thereafter to Bombay. "Between 1808 and 1818," says R. C. Dutt,[3] "the Madras Board of Revenue urged the wise plan of recognising the village communities of the Province." And he adds, "but representative village communities had no place in the scheme of the Company's absolute Government; the Directors decided to deal with the cultivators individually, without any intermediate bodies. The ancient village communities of Madras declined from that date." The same story was repeated in Bombay. Elphinstone, indeed, sent home reports[4] about these village communities which contained "in miniature all the materials of a State within themselves." He also drew the attention of the authorities in London to the fact that "a large portion of the ryots are the proprietors of their estates, subject to the payment of a 'fixed land tax' to Government," but, to quote Dutt again, "a fixed resolve to make direct arrangements with every separate cultivator and to impose upon him a tax to be revised at each succeeding settlement, necessarily weakened

3 R. C. Dutt: *op. cit.*, p. 67.
4 *ibid.*, p. 50 ff. (italics in the original).

village communities and extinguished Mirasi rights." Radhakamal Mukerjee has refuted Baden-Powell's contention that the ryotwari village was the original type in India, that the earliest settlers had no ideas of common tribal ownership and that individual property was the rule even in early land settlement.[5] If this is true, the claim that in recognising the ryotwari system, the Government only gave statutory recognition to what was already a settled fact would be untenable.

Under the ryotwari system the ryot or the land holder is recognised as holding the land directly from Government without the intervention of any intermediaries. His tenure is known as "occupancy" tenure which means the lands are heritable, transferable and otherwise alienable without the sanction of Government, but are subject to forfeiture in case of failure to pay the land revenue as assessed periodically. A system like this leaves a great deal of discretion to the Settlement Officer at the time of assessment; there is necessarily a great deal of guess-work in the estimation of several of the items relevant to the fixation of the assessment, and, when this is combined with the fact that every periodical revision is utilised as an occasion for enhancement, we have some explanation of why this system of 'peasant proprietorship' has not brought in all the glorious results attributed to it by economists and land reformers. The implication of the ryotwari system is that the State owns the land, and that the land holder derives his title to it directly from the State. Apart from the other consequences of this system, to which we shall turn presently, this claim of the State destroyed the collective basis of village life and organisation.

This review of the three prevalent systems of land tenures in the pre-Independence period, *viz.*, the Zamindari, the Mahalwari and the Ryotwari tenures indicates clearly that the early British administrators approached the problem of land settlement and assessment only pragmatically. Their inclination was to take as far as possible the line of least resistance so long as the payment of the dues fixed was assured. The fact nevertheless is that the early land policy of the Company and even of the officers under the Crown brought about far-reaching changes in the basis of land

5 Land Problems of India, *op. cit.*, pp. 325-327.

ownership, the system of cultivation, and the legal and social relationships as between the different classes of the rural community. Parasitic interests developed on the land, and a series of measures had to be taken in the course of the 19th century to rectify the obvious evils.

In the evolution of the Indian land tenure system, there was thus an inter-relationship between the mode of settlement of land revenue and the recognition of rights in ownership and cultivation. Before the history of land revenue assessment is taken up for study in another chapter, it is necessary to know here the effects of the system of land tenure on the various interests in the cultivation of land and measures of reform introduced by Government.

TENANCY PROBLEM

The land tenure system refers to the relationship between Government and the landowner. If the landowner himself cultivates the land, there is no further problem, except that of the relationship between the landowners and the agricultural labourers. The problem of tenancy arises when the landowner or zamindar lets out the land to someone else, who then becomes the tenant, on terms defined by contract or custom. The distinction between such a tenant and a mere agricultural labourer, though sometimes blurred in practice, is quite clear-cut conceptually. The latter receives a fixed wage and works under the supervision and control of the employer. He has no right to the land and is not directly concerned with the product. He merely does his allotted job in return for the wages, and there his responsibility ends. A tenant works on his own. He agrees to pay to the landowner a certain cash rent or, more often, a specified share of the produce. He utilises his own labour, also that of the members of his family, and may, in busy seasons or otherwise as need arises, employ hired labour to assist him. The landowner may supply, besides the land, some capital and equipment; often he supplies only land and takes no interest in actual agricultural operations. A tenant is thus not only his own manager, but also in part "entrepreneur;" his reward fluctuates according to the crops he obtains and the prices they fetch. It is a remarkable fact that in India, in the zamindari as well as in many cases in the ryotwari areas, the

owner did not cultivate the land himself, so that the problem of tenancy became acute all over the country.

The emergence of this problem is due to a variety of causes. In the permanently settled parts of the country, the inevitable result of conferring proprietary rights on the old revenue farmers was the creation of absentee landlords and the degradation of the original holders to a position of semi-serfdom. The new zamindars who were recognised by the British had little respect for traditional customs and rights. Their chief aim was to realise as much revenue as possible lest their newly-got zamindari should be put to auction and sold off to others.[6] Therefore, attempts were made to correct the initial mistake by legislation and a more systematic recording of rights, but, broadly speaking, the results have been similar to those in Bengal — a multiplicity of proprietary and sub-proprietary tenures, tenancy of various grades and a host of rent-receivers and rent-payers between the zamindar and the actual cultivator. This sub-infeudation resulted in the neglect by all these classes of their true economic functions since all the new interests in agriculture, instead of trying in co-operation to raise the maximum produce from the land, sought to wrest the utmost from one another. The tenant in this situation was unreservedly at the mercy of the landlord and the relationship between the two came to be characterised by various exactions in kind and cash, "fines", rack-renting and eviction of the tenant without any just reason. In fact, in all zamindari areas, whether settled permanently or temporarily, the development was along similar lines, so that a series of tenancy laws had to be passed to afford some protection to the ryots.

TENANCY LEGISLATION

In instituting the system of Permanent Settlement in Bengal, it was made clear that the recognition of revenue farmers as landlords for the purpose of collection of land revenue did not give them a 'blank charter' to exploit and oppress the cultivators. The Court of Directors expressly reserved the right to make from time to time all such regulations as may be necessary to prevent the ryots being improperly disturbed in their possession or loaded

6 B. R. Misra: Land Revenue Policy in the U.P. (1942), p. 56.

with unwarrantable exactions.[7] Though this declaration was re-affirmed in 1819, the actual rights of the cultivators were left unascertained at the time of the Permanent Settlement and were in fact allowed to be usurped by the zamindars.[8] The ryots were rack-rented, impoverished and oppressed.[9] Legislative interference, therefore, became unavoidable and the Bengal Rent Act was passed in 1859.

As the Rent Commission of 1880 clearly revealed, this legislation proved ineffective. The zamindars did their best to prevent a cultivator from becoming entitled to the occupancy tenancy through 12 years' uninterrupted cultivation. Various devices were employed for not only enhancing the rents but also for ejecting the old tenants. Such treatment was followed by acute agrarian discontent and even riots. In 1885, another Tenancy Act was, therefore, passed. The two main objects of the Act were to extend the right of occupation to settled cultivators, and to extend adequate protection to non-occupancy cultivators.[10] But even this was of no avail. Rents went on increasing, on the doctrine of average rate on grounds of higher prices, to the maximum from 1885 to 1928, years of progressive increase of prices throughout India. The law again intervened in 1928 and made occupancy holdings transferable, subject to certain conditions. It also provided that the landlord had the right of pre-emption to purchase the holding within two months of the sale at 10 per cent over the sale price. The right of pre-emption, which should have been vested with the occupancy ryot, was given to the landlord, even though more than half a century had elapsed since the first Tenancy Act was passed.

Thus although tenancy legislation was undertaken, the old policy of allowing "every point about which there could be any doubt.... to settle itself in favour of the landlord and against the public" continued.[11] The other Provinces such as the U.P., the Punjab, Bihar, Orissa, Bombay and Madras also passed legis-

7 Quoted by M. Azizul Huque, *op. cit.*, p. 226.

8 Land Problems of India, *op. cit.*, p. 149.

9 Report of the Land Revenue Commission, Bengal, Vol. I (1940), pp. 24-25.

10 R. C. Dutt: *op. cit.*, p. 461.

11 Report, 1871-72, quoted by M. Azizul Huque, *op. cit.*

lation in the course of this period more or less on the model of the Bengal Tenancy Acts, dealing with the zamindars, *talukdars* and *khots*. But the results were everywhere the same, and the law was too tender to the landlord to uproot the evils of tenure from the land system. As the Floud Commission summed up the position: "It is true that the successive provisions of the Tenancy Acts have endowed the raiyats with the practical ownership of the land. But a large and increasing proportion of the actual cultivators have no part of the elements of ownership, no protection against excessive rents and no security of tenure."[12]

In spite of all the legislation since 1859, the defects of tenancy continued as the law found it difficult to limit the landlord's rights and powers which had been propped up for a long time by statute as well as by judicial interpretation. Several factors were at work which made the problem more complex and more acute sooner than the law could cope with. These factors were: the rapid growth of population with increasing pressure on the land; the growth of a money economy, which led to extensive alienation of land from the agriculturists to non-agricultural classes; the de-industrialisation of the countryside, which was a characteristic feature during the period of the economic transition in India; and the prestige attaching to the ownership of land, combined with the notion that actual work on the land was degrading, which led the well-to-do classes to invest in land and become absentee landlords. In this process the erstwhile owner after selling off his land to a moneylender often went on bended knees to him asking to be allowed to cultivate his old plot of land on terms which were necessarily unfavourable to him.[13] The divorce of ownership from cultivation coupled with the excessive pressure on land resulted in a rapid rise in the number of functionless intermediaries who saw in the growing helplessness of the tenant a way to strengthen their own position without making any contribution to the maintenance or improvement of the productivity of the land. Consequently, a complicated chain of proprietary and sub-proprietary rights in land was built up. There was an increase of 62 per cent in the number of rent

12 Report of the Land Revenue Commission, Bengal, *op. cit.*, p. 39.

13 *Vide* Report of the Royal Commission on Agriculture in India (1928), p. 433.

farmers between 1921 and 1931, and since 1931 there has been a further process of sub-infeudation below the statutory ryot. At the same time, a steady reduction took place in the number of actual cultivators possessing occupancy rights and there was a large increase in the number of landless labourers. Their number increased by 49 per cent between 1921 and 1931. They constituted 29 per cent of the total agricultural population.[14]

The same problem of intermediaries arose even under the Mahalwari and Ryotwari systems, where ordinarily the land holder was expected to be the cultivator. Thus, in the Punjab, 7.3 per cent of the cultivated land was farmed by occupancy tenants and about 48.2 per cent by tenants-at-will. The general consensus of opinion as recorded by the Punjab Land Revenue Committee was that "the ordinary tenant with one or two ploughs does not often earn more, and may in places earn less than the permanently hired agricultural labourer."[15] The unequal distribution of the ownership of land implies the divorce of ownership from cultivation and indicates correspondingly the magnitude of the tenancy problem. In Bombay, apart from the *talukdari* and *khoti* tenures which were of the nature of zamindari tenures, one-third of the cultivated area belonged to landlords who received rents without directly or indirectly taking part in the cultivation.[16]

On the whole, taking the zamindari as well as the ryotwari areas, about 75 per cent of the cultivated area was estimated to be cultivated by tenants with varying degrees of rights and liabilities. The rents paid by these tenants were in most cases exorbitant. The tenants were required often to render a variety of personal services of a semi-feudal type to the landowner. The practice of crop-sharing prevailed over a large part of the country. Though this system had its advantages in early days, the subsequent developments hardly left even a subsistence level of income to the tenants on this basis.

14 Report of the Land Revenue Commission, Bengal. *op. cit.*, p. 37.

15 The Report of the Land Revenue Committee, Punjab, Government of Punjab (1938), p. 34. It is also pointed out that about 61 per cent of the cultivated area of the Province belonged to only 15 per cent of the owners.

16 Land Revenue Administration Report, Bombay, 1936-37.

PRE-INDEPENDENCE LEGISLATION AND CONGRESS AGRARIAN REFORMS COMMITTEE[17]

During the pre-Independence era, some piecemeal attempts were made for eliminating some of the worst features of the existing land tenure relations. After the 1936 elections to the Provincial Assemblies, popular governments were formed in most of the Provinces. This synchronised with mass upheavals of the peasants in some of the zamindari areas. The popular governments responded by introducing legislation for the protection of tenants. The Government of Bombay enacted a law creating a class of protected tenants who could not be evicted except for non-payment of rent and some such specific reasons. Rents were also reduced. In Bihar, all rent enhancements between 1911-13 were cancelled and illegal evictions by the zamindars were made a penal offence. In Uttar Pradesh, a moratorium was declared on all arrears of rent and debts, and ejectments of tenants were prohibited. When the U.P. Tenancy Act of 1939 came into force, permanent and heritable occupancy rights were given to 7 million tenants over an area of 163 million acres.

The first comprehensive statement on land policy is contained in the Report of the Agrarian Reforms Committee appointed by the President of the Indian National Congress, in 1948.[18] The Committee stated that there could not be any lasting improvement in agricultural production and efficiency without comprehensive reforms in the country's land system. While fully supporting the proposals for the abolition of the zamindari tenure, which were before the legislatures of several Provinces, the Committee categorically stated that in the agrarian economy of India, there was no place for intermediaries and land must belong to the tiller. It, therefore, recommended that in future sub-letting of land should be prohibited except in the case of widows, minors and other disabled persons. Resumption of land by the landless from the tenants was to be permitted only to the extent necessary to make owner-cultivation economic. More land could be resumed subject to the condition that in the process, the holding of the

17 *Vide* M. L. Dantwala's Paper on "Interrelationship between Land Reform and Community Development," submitted to ECAFE in March, 1961.

18 Report of the Congress Agrarian Reforms Committee, The All-India Congress Committee (1949).

tenant did not become uneconomic. The tenant was to be given the right to purchase the non-resumable portion of the land at a reasonable price to be determined by Regional Land Tribunal. In order to avoid the occurrence of concealed tenancy, it was suggested that any arrangement under which the person working on the land shared the risk of cultivation, as would be the case in crop-sharing, would be deemed to be a tenancy. Only those who put in a minimum amount of physical labour and participated in actual agricultural operations would be considered as cultivating the land personally.

Two other important recommendations of the Congress Agrarian Reforms Committee may also be noted. The Committee recommended that there should be a ceiling on the size of holdings which any one farmer should own and cultivate. Co-operative farming was recommended for palpably uneconomic units of land. Individual peasant farming was recommended subject to limitations of a ceiling and a floor and social control in the matter of sub-letting, transfers and a test of good husbandry.

RECENT LAND REFORMS

The First Five-Year Plan of the Government of India, in its statement on Land Policy, endorsed the recommendation of the Congress Agrarian Reforms Committee. While emphasizing that increase in agricultural production represented the highest priority in planning over the next five years, it was stated that the social aspect of the problem was no less important. It was mentioned that the policy for land may be considered adequate in the measure in which it reduces disparities in wealth and income, eliminates exploitation, provides security for tenant and worker and finally, promises equity of status and opportunity to different sections of the rural population.[19]

The land reform programme in India can be best considered under the following major headings: (i) Abolition of Intermediary or Zamindari rights; (ii) Tenancy legislation aimed at reduction of rent, security of tenure and purchase of land by tenants; (iii) Ceiling on individual holdings; and (iv) Co-operative farming.

19 First Five-Year Plan, Planning Commission Government of India (1953), Chapter XII — Land Policy, p. 184.

The above also represents the chronological order in which these measures were introduced. To these may be added the legislation for consolidation of holdings and prevention of fragmentation which was being adopted with varying degrees of intensity all through this period and even before Independence.

Before discussing the salient features of these different measures of land reforms, it is necessary to note that land reforms fall within the jurisdiction of the State Governments, and the Union Government, at best, provides general guidance. Because of this, and also the great variations in local conditions, the legislation while broadly conforming to the general policy varies in details. It would not be possible here to discuss the content of land reform legislation in all its variations in the different States. What follows therefore is a broad description of the essential features of the various land reform measures.[20]

ZAMINDARI ABOLITION

The Zamindari or the Intermediary tenures existed predominantly in the States of Uttar Pradesh, Bihar, West Bengal and former Hyderabad and parts of Madras and Andhra. The legislation enabled the State Governments to acquire all rights of the intermediaries on payment of compensation. The acquisition included, besides the tenant-cultivated land, all waste lands, communal lands, forests, mines, minerals, rivers, channels and fisheries. Land under personal cultivation of the intermediaries (or nominally recorded as such) was exempted from acquisition. In all about 173 million acres of land were acquired for which the compensation including rehabilitation grants payable to the intermediaries amounted to Rs. 513.6 crores.[21] Acquisition of these rights by the State brought the statutory tenant (but not necessarily the sub-tenants) into direct relationship with the State. In some cases, tenants acquired full ownership rights including the right of transfer, without any payment. In others, they were required to make some payment to the State for acquisition of full

20 For details see: Agricultural Legislation in India, Vol. IV—Land Reforms (Abolition of Intermediaries) (1953), and Vol. VI—Land Reforms (Reforms in Tenancy) (1955), Ministry of Food and Agriculture, Government of India.

21 Progress of Land Reform, Planning Commission, Government of India (1963), p. 4.

occupancy rights. Until these rights are acquired, in effect, they remain the tenants of the State Government and continue to pay the same amount in the form of land revenue as they used to pay as rent to the zamindars. The land revenue is reduced only on the payment of purchase price to the Government. In the zamindari areas, rents paid by the statutory tenant to the intermediaries had been regulated for the past many decades by legislation.[22] As such, these were regarded as reasonable and further deductions were not generally considered necessary.

As will be seen, the average rate of compensation paid to the intermediaries comes to about Rs. 30 per acre. This is substantially below the market price of the land. Thus, though the average quantum of compensation cannot be considered as excessive, a handful of zamindars who owned very large areas of land became entitled to substantial amounts of compensation. Only a part of the compensation—or rehabilitation grant—and that too to small landowners, is paid in cash, the remaining being paid in long-term bonds. The assessment and payment of compensation has been a time-consuming process primarily because of the absence of proper record of rights and inadequate revenue administration.

Land under personal cultivation of the zamindars (or nominally recorded as such) was exempted from acquisition, sometimes without any limit of retention. It is alleged that this has enabled several big zamindars to retain considerable portions of land, defeating, to some extent, the main purpose of the legislation. It is reported that mechanised, capitalistic farming is being undertaken on these lands by the ex-intermediaries. The zamindars did not yield readily to the onslaught of the legislation, but they preferred to fight their battle only through the Court of Law. They won several rounds; one legislation after another was declared unconstitutional on the ground that it violated the Fundamental Rights guaranteed under the Constitution. Section 31 of the Constitution of India provides that "no property, moveable or immoveable..............shall be taken possession of or acquired for public purposes under any law authorising the taking of such possession or acquisition, unless

22 The Bengal Tenancy Act of 1885 and Bihar Tenancy Act of 1885.

the law provides for compensation for the property and either fixes the amount of compensation or satisfies the principles on which and the manner in which the compensation is to be determined and given." The Supreme Court, interpreting the Article, stated that "while it is true that the legislature is given discretionary power of laying down the principles which should determine the amount to be given to the owner for the property appropriated, such principles must ensure that what is determined as payable must be compensation, *i.e.*, just equivalent to what the owner has been deprived of. Within the limits of this basic requirement of full indemnity of the expropriated owner, the legislature has to judge as to what principles should guide the determination of the amount payable." Adherence to this "basic requirement" of payment of "full indemnity" would have meant a virtual moratorium on the acquisition of the zamindari rights by the State. Confronted with this situation, the Parliament amended the Constitution in 1951. A new Article (Article 31-A) was inserted which lays down that "no law providing for the acquisition by the State of any property or any rights therein or for extinction or modification of any such rights shall be deemed to be void on the ground that it was inconsistent.........with any of the Fundamental Rights conferred by Part III of the Constitution." A new Article 31-B specifically safeguarded the position of the Acts and Regulations specified in the Ninth Schedule of the Constitution. The Schedule included all the Acts which had been enacted until then. The validity of this constitutional amendment was also challenged in the Supreme Court. The Court, however, held the amendment as valid and constitutional.

TENANCY LEGISLATION

The main provisions of the tenancy legislation relate to regulation of rent, security of tenure and conferment of ownership on tenants. The Second Five-Year Plan had recommended that the level of rent should not exceed one-fourth or one-fifth of the gross produce. Legislative measures have been adopted in all States for the regulation of rent; but the levels prescribed vary a great deal from State to State. In some States, rent is fixed as a multiple of land revenue, but since the levels of land revenue themselves need rationalisation, any such correlation may not be

fair and equitable. There is also a trend in favour of computation of crop rents into cash rents.

In order to provide security to the tenants, the tenancy laws have imposed restrictions on the landlord's right to resume land from the tenants. This is related in the first instance to the amount of land already under the personal cultivation of the landlord. A greater latitude is shown to small landowners who may have leased a portion of their land to the tenants. They are permitted to make their own cultivated holding economic. But, even here, care is to be taken to see that in the process, the tenant is not deprived of the entire land cultivated by him on lease. Once the land is declared as non-resumable under the above provisions, the tenants of such lands cannot be evicted and they virtually acquire the occupancy right. One of the essential conditions of resumption is that the resumed land will be cultivated *personally*. Immense difficulties have been experienced in defining personal cultivation and the looseness in the definition resulted in many improper resumptions. When the legal provisions were strict, some landlords persuaded their tenants to voluntarily surrender the leased land. Subsequently, the definition of personal cultivation has been revised and provisions regarding the voluntary surrenders tightened up.[23] Sub-letting of

23 Definition of personal cultivation in the Bombay Tenancy and Agricultural Lands Act, 1948.

(6) "to cultivate personally" means to cultivate land on one's own account, (i) by one's own labour, or (ii) by the labour of any member of one's family, or (iii) under the personal supervision of oneself or any member of one's family by hired labour or by servants on wages payable in cash or kind but not in crop share, being land, the entire area of which (*a*) is situated within the limits of a single village, or (*b*) is so situated that no piece of land is separated from another by a distance of more than five miles, or (*c*) forms one compact block:

Provided that the restrictions contained in clauses (*a*), (*b*) and (*c*) shall not apply to any land (i) which does not exceed twice the ceiling area, (ii) up to twice the ceiling area, if such land exceeds twice the ceiling area.

A tenant is defined as a person lawfully cultivating any land belonging to another person if such land is not cultivated personally by the owner and if such person is not (*a*) a member of the owner's family, or (*b*) a servant on wages payable in cash or kind but not in crop share, or a hired labourer cultivating the land under the personal supervision of the owner or any member of the owner's family.

The Bombay Tenancy and Agricultural Lands Act — Bombay Act No. LXVII of 1948 (as modified up to 1st October, 1961), Government of Maharashtra (1962).

land in future is prohibited under many Acts, exceptions being made in the case of army personnel, widows, orphans and disabled persons.

Tenants are entitled to purchase the non-resumable leased land at a reasonable price which is either stipulated in the legislation, or is determined by a land tribunal. The Bombay Tenancy Law (1957 amendment) however, goes one step further and declares that as from 1st April, 1957, all tenants in cultivating possession of the leased lands are deemed to have purchased the land at a price mentioned in terms of a multiple of land revenue varying from 20 to 200. The landlords, however, are given the right to file applications under which they could contest the tenant's right to be deemed as an owner.

As will be seen from the above, the legislation aims at making leasing of land unattractive, and ultimately terminate the system altogether. The landlords did take advantage of the loopholes in the legislation wherever they existed and also tried to circumvent the provisions by all manner of dubious ways. Enquiries into the working of the tenancy legislation have revealed that the implementation of the law has been far from satisfactory.[24] Rents higher than the legally prescribed minimum continue to be paid; there were also several cases of unlawful evictions, sometimes with the acquiescence of the tenant himself through the so-called voluntary surrenders. With the afflux of time, however, the conditions are getting stabilised, though not always in complete conformity with what was intended by the legislation, still at a level which is certainly an improvement over the state of affairs existing before the enactment of the legislation.

CEILING ON HOLDINGS

At the outset, it is necessary to note that apart from the ceiling on the amount of land which a landlord could resume from the tenant, there are two other types of contemplated ceilings on

24 *Vide* (i) V. M. Dandekar and G. J. Khudanpur: Working of Bombay Tenancy Act, 1948 — Report of Investigation (1957); (ii) M. B. Desai: Report on an Enquiry into the Working of the Bombay Tenancy and Agricultural Lands Act, 1948 (as amended upto 1953) in Gujarat (excluding Baroda District) (1958); (iii) V. Y. Kolhatkar and S. B. Mahabal: An Enquiry into the Effects of the Working of the Tenancy Legislation in the Baroda District of Bombay State (1958).

individual ownership. One pertains to the acquisition of land in the future and the other, to the existing holdings. Legislation in regard to the former has been passed in all the States and Union Territories. Legislation for ceiling on existing holdings has been enacted in all the States and the Union Territories except the former Punjab. In the former Punjab area, the law empowers the Government to settle ejected tenants on surplus lands in the possession of a person above the permissible limit of 30 standard acres.

The level at which the ceiling was to be imposed and the criteria for its determination presented a difficult issue. Various criteria such as gross and net income, a work unit and a plough unit were suggested. Some of the earlier Acts lay down that the ceiling should be placed at three to four times the family holding, the family holding being defined as a unit which yielded an annual net income of Rs. 1,200. Subsequently, the reference to the income or to the multiple of the family holding is omitted and the ceiling levels are fixed, keeping in view the variations in the quality of land. The surplus over these ceilings is acquired, for which compensation is paid at rates considerably below the market price.

Compensation has two aspects, namely, (i) compensation that may be paid to the landowners for the acquisition of surplus land; and (ii) the price that may be recovered from the allottees of surplus land. As regards compensation payable to the owners, the suggestion in the Second Five-Year Plan is that it may be determined either as a specified amount related to the different classes of land or in terms of a multiple of land revenue or in such other manner as may be considered feasible. It has been further suggested that the compensation may be paid in bonds redeemable over a period of, say, 20 years. With regard to the price to be recovered from the allottees, the suggestion is that it should be so fixed that the total annual burden falling on the allottee on account of instalments of compensation and interest payable thereon, if any, and the land revenue should not exceed the fair rent recommended in the Plan, *i.e.*, one-fourth or one-fifth of the gross produce. It is envisaged that the aggregate amount of compensation payable to the owners would be recovered from the allottees and that there would be no net additional liability on State Governments.

Certain categories of farms are to be exempted from the operation of the ceiling. Three main factors are taken into account in deciding upon the exemptions from the purview of the ceiling, *viz.*, (i) integrated nature of operations, especially where industrial and agricultural work is undertaken as a composite enterprise; (ii) specialised character of operations; and (iii) the need to ensure that the efficiently managed farms which fulfil certain conditions are not broken up. In the light of these considerations, the Second Five-Year Plan recommended exemptions to the following categories of farms from the operation of ceilings: (i) Tea, coffee and rubber plantations; (ii) Orchards where they constitute reasonable compact areas; (iii) Specialised farms engaged in cattle grazing, dairying, etc.; (iv) Sugarcane farms, operated by sugar factories; and (v) Efficiently managed farms which consist of compact blocks, on which heavy investment or permanent structural improvements have been made and therefore if broken up is likely to lead to a fall in production.

While most of the States have conformed to these recommendations, legislation in Jammu & Kashmir, Kerala, Madras, Maharashtra, Uttar Pradesh and West Bengal does not provide exemption for efficiently managed farms. In Uttar Pradesh, in case of mechanised farms, a provision has been made enabling the Government to manage the surplus lands as State farms, the existing owners being given preference in the appointment of managers. As regards sugarcane farms operated by sugar factories, while legislation in several States exempts them from the operation of ceiling, a different approach has been adopted in Madras, Uttar Pradesh and Maharashtra. In Madras, legislation provides for the setting up of a Sugar Factory Board to review whether sugarcane farms of individual factories should or should not be exempted from ceilings. Considerations such as the requirements of the sugar factory and its financial structure have to be taken into account before final decisions are taken. In Uttar Pradesh, while there is no exemption from ceilings, provisions relating to mechanised farms would also apply to sugarcane farms operated by sugar factories. In Maharashtra sugarcane farms of sugar factories are not exempted from ceilings but provision is made for maintaining the integrity of the farms in one or more compact blocks, for full and continued

supply of raw material to sugar factories at a fair price, and for grant of surplus land to joint farming societies consisting, as far as possible, of persons who had previously leased their lands to the sugar factory, agricultural labourers employed on the farm, technical and other staff engaged by the factory for work on the farm, adjoining land holders who are small holders and landless workers.

The surplus land acquired by the State is to be redistributed according to a schedule of priorities laid down in the Act. The Maharashtra Agricultural Lands (Ceiling on Holdings) Act lays down the following list of priorities: (i) A tenant rendered landless as a result of resumption; (ii) A peasant rendered landless as a result of acquisition of land for irrigation project; (iii) A joint farming society of agricultural labourers, landless persons or small holders; and (iv) Landless persons. The allottees are required to pay an occupancy price in respect of the land allotted to them.

It is feared that due to considerable delay in enacting the legislation, numerous legitimate and illegitimate partitions have already taken place and the amount of surplus land that would now become available for purposes of redistribution is not likely to be substantial. In any case, it will not be sufficient for the purpose of appeasing the land hunger by making land available to all or even a majority of the landless agricultural labourers.

CO-OPERATIVE FARMING AND FUTURE AGRARIAN PATTERN

The Congress Agrarian Reforms Committee (1949) recommended co-operative farming for what it termed as 'the below basic holdings.'[25] The basic holding was defined as a holding smaller than which would be palpably uneconomic from the point of view of efficiency of agricultural operations. To facilitate the practical application of the concept, one-third of the economic holding was to be considered as the basic holding. Two considerations were involved in recommending this new operative concept of small holdings for the purpose of co-operative farming. It was believed that farms which at present were somewhat below the economic level could be upgraded through either additions of

25 Report, *op. cit.*, p. 49.

small areas or extension of irrigation and the assistance of service co-operatives. But the major consideration was purely administrative or organisational. One cardinal test of the suitability of a land reform measure is its practicability. The Committee felt that the task of bringing all the existing uneconomic farms in the co-operative fold would be beyond the official as well as non-official administrative and organisational capacity. The recommendation of the Committee regarding the maximum size of the co-operative farm may also be noted. The Committee wrote: "To minimise the odium of coercion and to maximise the sense of individual freedom, we recommend that the farmers whose holdings are smaller than the basic may not be pooled into a single giant farm but may be allowed voluntarily to join any co-operative joint farm upto the size of the maximum holdings which we have put at three times of the economic holding. The idea is that the management of such a co-operative should be within the capacity of the farmers and they may not be reduced to mere automatons in the whole framework." Two points may be noted: the Agrarian Reforms Committee desired that (i) co-operative farming should be confined to the sector of palpably uneconomic farms; and (ii) a limit should be placed on the maximum size of the co-operative farms.

Regarding co-operative farming, the recommendation of the First Five-Year Plan was that "for reasons mentioned above, it is important that small and medium farmers in particular should be encouraged and assisted to group themselves voluntarily into co-operative farming societies. The area under a co-operative farming society should not be less than the prescribed minimum. It is perhaps not necessary to prescribe maximum for a co-operative farming society.

The approach of the Second Five-Year Plan on co-operative farming was equally cautious and it recommended that the general aim should be to bring the below basic holdings increasingly in the co-operative pools.[26] It also suggested that such essential steps should be taken as will provide sound foundations for the development of co-operative farming so that over a period of 10 years or so, a substantial portion of agricultural lands is cultivated on co-operative lines. The aim was stated to be to "enlarge the co-

26 Second Five-Year Plan, Planning Commission, Government of India (1956), p. 204.

operative sector until the management of the entire land in the village becomes the co-operative responsibility of the community." It was further stated that "once the stage of co-operative village management is reached,...........the distinction between those who have lands and those who are landless will lose much of its significance."

In January 1959, the Indian National Congress, at its 64th session in Nagpur, passed a Resolution on the agrarian organisational pattern, *Inter alia,* the Resolution stated that "the future agrarian pattern should be that of co-operative joint farming in which the land will be pooled for joint cultivation." In the Resolution, there was no qualification regarding restricting the co-operative pattern to the small holders. A presumption, therefore, arose that the intention of the Government was to convert the entire agricultural economy into co-operative farming. In June 1959, the Government of India appointed a Working Group on Co-operative Farming mainly for the purpose of examining the organisational and managerial problems likely to be faced by the joint farming societies. The Working Group therefore was not called upon to express its views on the policy of the development of co-operative farming. But it noted that its visits to various farming societies confirmed its belief that co-operative farming was an effective method and agency for improving the economic and social conditions, *particularly for small and middle cultivators.*[27] As for the size of the co-operative farm, the Group expressed the view that it was not necessary to lay down a rigid minimum size. But as regards the maximum size, its view was that compact and homogeneous units were likely to prove more successful because the chances of friction and misunderstanding were reduced considerably. It, therefore, recommended that "the size of the farm should not be too large and it was not essential that the co-operative farm should cover the entire village. On the other hand, there would be an advantage in having more than one co-operative farming society in the same village of average size." The programme of development it recommended for the Third Five-Year Plan was quite modest. It was recommended that 320 carefully planned pilot projects should be carried out

27 Report of the Working Group on Co-operative Farming, Vol. I, Government of India (1958).

in the next four years in the NES Blocks. In each Block, 10 societies may be organised. At the same time, it hoped that as a result of the working of the pilot projects the programme of education and training and widening of co-operative effort in general, the idea of co-operative farming would gain ground and that 20,000 new societies would come into existence by the end of the Third Five-Year Plan. The recommendations of the Working Group were generally approved by the National Development Council in September, 1960.

REVIEW OF PROGRESS[28]

A brief review of the progress made in the implementation of the proposals for land reform is set out below.

ABOLITION OF INTERMEDIARIES

Intermediary tenures like zamindaris, *jagirs, inams,* etc., which covered more than 40 per cent of the area of the country, have almost been entirely abolished. Legislation has been enacted in all States and the Union Territories. In most States the legislation has also been implemented. In others, it is in the process of implementation. On abolition of intermediaries, the vestiges of feudalism have been removed and a large body of tenants estimated at 20 million have been brought into direct relationship with the State. As a result, the social and economic position of the tenants has considerably improved.

With the abolition of intermediaries, considerable area of forests and cultivable waste lands has also vested in Government in most States. The forest lands vesting in the Governments have generally been placed under the management of the State Forest Departments. The extent of cultivable waste land vesting in the State Governments of Andhra Pradesh, Bihar, Madras, Mysore, Orissa, Punjab and Rajasthan is estimated at 15.5 million acres, out of 34.6 million acres of culturable waste land. In Andhra Pradesh, Mysore and Orissa, the bulk of the culturable waste lands have vested in Government. In fact in the latter two States and in Rajasthan where the *jagir* and zamindari abolition is in the process of implementation, the position may improve further on the completion of the process. In several

28 *Vide* Progress of Land Reform, *op. cit.*, pp. 1-29.

cases, the management of cultivable waste lands has been vested in the village panchayats as in the Punjab and in other cases they are being managed directly by Government.

Compensation

The total compensation payable to the divested intermediaries amounted to Rs. 513.62 crores—Rs. 421.21 crores as regular compensation and Rs. 92.41 crores as rehabilitation grants. Of the total amount of compensation payable, Uttar Pradesh accounted for Rs. 163 crores, Bihar for Rs. 158 crores, West Bengal for Rs. 70 crores and Rajasthan for Rs. 54 crores, these four States accounting for about 85 per cent of the total. Compensation is payable in cash or bonds redeemable over periods varying from 40 years in Bihar and Uttar Pradesh, 20 years in West Bengal, Assam and Maharashtra-Gujarat to 15 years in Rajasthan. The compensation paid up to 1960-61 amounted to only Rs. 224.56 crores—Rs. 100.03 crores in cash and Rs. 124.53 crores in bonds. Uttar Pradesh alone accounted for Rs. 119 crores of the total compensation paid.

In many States, the legislation provides for assessment of compensation on the basis of a graded multiple of the net total income of the intermediary. Before a multiple applicable to an intermediary can be determined, it thus becomes necessary to ascertain his total income in respect of all his estates or shares in estates. In several States like Bihar, West Bengal and Rajasthan, there was hardly any up-to-date record of rights on the basis of which estimates of the assets of an intermediary or estate could be framed. In Madras and Andhra area there is a further difficulty arising out of the provision which relates compensation to the ryotwari demand to be determined after ryotwari settlements have been made in the ex-zamindari estates. This has naturally taken time. Within the above-mentioned limitations, the State Governments, it seems, are doing their best to expedite payment of compensation. It is anticipated that the issue of compensation bonds will be completed by the end of the Third Plan period.

In the permanently settled areas and in areas under *jagirs* cadastral surveys had either not been done or had been done many decades ago. In many cases there was hardly any revenue administration at the village level and annual land records were

not being maintained. In most cases special staff had to be appointed for assessment and payment of compensation. The task of revenue administration is becoming increasingly more onerous and important as progress is made in enactment of legislation for tenancy reform and ceiling on land holdings.

TENANCY REFORM

Regulation of Rent

It was recommended in the First and Second Five-Year Plans that rent should not exceed one-fourth or one-fifth of the gross produce. Legislative measures have been adopted in all States for the regulation of rent. There are large variations in the rates of rents fixed in various States. In Gujarat, Maharashtra and Rajasthan, maximum rent has been fixed at one-sixth of the gross produce. In Assam, Mysore, Delhi, Manipur and Tripura, it varies between one-fourth and one-fifth. In Kerala, the maximum rent varies between one-fourth and one-half of the gross produce. In Orissa and Bihar it is one-fourth of the gross produce. In Madhya Pradesh, it varies between 2 to 4 times the land revenue according to class of land. In the Punjab, it is still one-third of the gross produce. In Madras, it varies between 33⅓ to 40 per cent of the gross produce. In Andhra area, Jammu & Kashmir, and West Bengal (in case of share-croppers), it is as much as one-half of the gross production in some cases. Rent regulation whether as a share of the produce or in cash or as a multiple of land revenue can be effective only in cases where the tenants enjoy security of tenure.

Security of Tenure

Legislation providing for comprehensive tenancy reform has been enacted in Assam, Gujarat, Jammu & Kashmir, Kerala, Madhya Pradesh, Maharashtra (enacted but not enforced), Mysore, Orissa, Punjab, Rajasthan, Uttar Pradesh, West Bengal (except share-croppers) and in the Union Territories of Delhi, Himachal Pradesh, Manipur and Tripura. In Andhra Pradesh, Bihar, Madras, and West Bengal (in respect of share-croppers) comprehensive legislation has yet to be enacted. Pending enactment of comprehensive legislation, special legislation has been enacted to provide for temporary stay of ejectment of tenants in Andhra area, Madras and Mysore. In Bihar, the present law provides

that tenants (under-raiyats) who hold land on oral leases cannot be evicted except on grounds of non-payment of rent or misuse of land. Tenants holding lands on written leases are not, however, protected from ejectment. In West Bengal the share-croppers have also been provided security of tenure in a limited measure.

In States where comprehensive legislation has been enacted or is on the anvil, the provisions for resumption follow broadly three different patterns, namely, (i) all tenants have been given full security of tenure without a right for landowners to resume land for personal cultivation; (ii) owners have been given the right to resume a limited area for personal cultivation subject, however, to the condition that a minimum area or a portion of the holding is left with the tenant; and (iii) a limit has been placed on the extent of land which a landowner may resume but the tenant is not entitled to retain a minimum area for cultivation in all cases. Uttar Pradesh, West Bengal (in respect of under-raiyats) and Delhi belong to the first category. Gujarat, Kerala, Madhya Pradesh, Maharashtra, Mysore, Orissa, Rajasthan, Himachal Pradesh and Manipur fall into the second category. In Assam and Punjab the owner can resume land upto a prescribed limit, but the right to resume is subject to the tenant being given alternative land up to a prescribed minimum by Government. Jammu & Kashmir, Manipur, Tripura and West Bengal (in respect of share-croppers) belong to the third group. There are, however, considerable variations in the detailed provisions from State to State.

Ownership for Tenants

It has been suggested in the Second Five-Year Plan that each State should have a programme for converting tenants of non-resumable lands into owners and putting an end to vestiges of tenant-landlord relationship. Progress made in this direction has been uneven. Legislation has been enacted for bringing tenants into direct relationship with the State in Gujarat, Kerala, Madhya Pradesh, Maharashtra, Mysore, Orissa, Rajasthan, Uttar Pradesh, West Bengal and in the Union Territories of Delhi, Himachal Pradesh, Manipur and Tripura. In West Bengal, the tenants and sub-tenants have been brought into direct relationship with the

State and conferred full ownership rights. The share-croppers have not, however, been brought into direct relationship with the State nor have they been given an optional right of purchase. In the former Punjab area, the tenants of non-resumable lands have an optional right of purchase which is further subject to the condition that only such tenants of non-resumable lands can exercise the right of purchase as are in continuous possession for a minimum period of six years. In Assam, Bihar, Jammu & Kashmir and Madras, there is no provision for bringing the tenants into direct relationship with the State or for an optional right of purchase except in respect of surplus lands vesting in Government. As a result of provisions enabling tenants to become owners of their lands, about 3 million tenants and share-croppers have acquired ownership of more than 7 million acres in different states as shown below .

State	Number of tenants (in thousand)	Area in respect of which ownership conferred (in thousand acres)
Gujarat	462	1,408
Madhya Pradesh	358	N.A.
Maharashtra	618	1,674
Punjab	22	147*
Uttar Pradesh	1,500	2,000
West Bengal	N.A.	800
Telengana (Andhra Pradesh)	33	202
Delhi, Himachal Pradesh and Tripura	63	79

* Area in standard acres. N.A. = Not available.

Source: Fourth Five-Year Plan — A Draft Outline, Planning Commission, Government of India (1966), p. 126.

CEILING ON LAND HOLDINGS

Ceiling on land holdings has two aspects, namely, (i) ceiling on future acquisition; and (ii) ceiling on existing holdings. Legislation for ceiling on future acquisition has been enacted in all the States. The progress made in the enactment and implementation of the legislation for ceiling on existing holdings is as follows: (i) In Jammu & Kashmir, the legislation enacted in 1951 has been implemented and about 4.5 lakh acres were taken over by the State Government. Of this about 2.3 lakh acres have been settled with tenants who were in possession of the surplus

land. The bulk of the remaining area has been allotted to displaced persons. (ii) In the Punjab, legislation was enacted in 1955 and in Pepsu area in 1956. Out of 4.2 lakh acres which have been declared surplus, 1.5 lakh acres have been utilised for settling tenants and landless persons. (iii) In West Bengal, about 5.24 lakh acres of agricultural land have been taken over by Government and leased out to share-croppers and landless workers on yearly basis. More areas will be taken over as progress is made in the implementation of the ceiling provisions. No estimate of the likely surplus is available at present. The bulk of it is already in the possession of *bargadars*. (iv) In Assam where legislation was enacted in 1957, rules have been framed and declarations of surplus holders obtained which are under scrutiny. No surplus land has yet been taken over. (v) In Uttar Pradesh, 1.4 lakh acres have been declared surplus, of which 24,000 acres have been distributed. In Maharashtra, about 90,000 acres held by sugar factories have been declared surplus and 35,000 acres have been taken over by the State Government. Pending formation of co-operative farming societies, this area is to be managed by the Maharashtra State Farming Corporation. In Andhra Pradesh 52,000 acres of surplus land have been located so far. In Gujarat, Madhya Pradesh, Bihar, Madras, Delhi, Himachal Pradesh and parts of Tripura, legislation has been enacted but further steps for implementation have to be taken. In other States, the legislation has yet to be enforced.

Level of Ceiling

There are considerable variations in the level of ceiling adopted in different States. In Assam, Jammu & Kashmir, West Bengal and Manipur, there is one uniform ceiling limit irrespective of the class of land, the level of ceiling being fixed at 50 acres, 22¾ acres and 25 acres each, respectively. In a few States, the level of ceiling has been fixed in terms of ordinary acres to take account of different classes of lands, for example, at 4½ times the family holding, *i.e.*, 27 to 324 acres in Andhra Pradesh, 20 to 60 acres in Bihar, 20 to 80 acres (or 25 standard acres) in Orissa, 19 to 132 acres in Gujarat, 18 to 126 acres in Maharashtra and 15 to 37½ acres in Kerala. The level of ceiling has been fixed at 25 standard acres in Madhya Pradesh and Tripura; at 27

standard acres in Mysore; and at 30 standard acres in Punjab, Rajasthan and Delhi. The ceiling is related to rental value or land revenue assessment in Madras, Uttar Pradesh and Himachal Pradesh. The area equivalents of rental value or land revenue are left to be determined by the Government.

On imposition of ceiling on the existing holdings, about 2 million acres have become available in nine States, as can be seen from below, for redistribution. It should be noted that only in Jammu and Kashmir and West Bengal, the surplus land available is of some significance.

(*in thousand acres*)

State	Net area sown	Surplus area	Proportion of col (3) to col (2)
(1)	(2)	(3)	(4)
Assam	5,758	34.0	0.6
Gujarat	23,620	38.8	0.2
Jammu & Kashmir	1,724	450.0	26.1
Maharashtra	44,490	162.5	0.4
Madhya Pradesh	40,392	67.1	0.2
Madras	15,057	20.2	0.1
Punjab	18,732	368.5*	2.0
West Bengal	13,427	776.5	5.8
Uttar Pradesh	42,652	222.7	0.5

* Area in standard acres.

Source: For col. (2), Indian Agriculture in Brief, Seventh Edition, Directorate of Economics and Statistics, Ministry of Food and Agriculture, Government of India (1966).

For col. (3), Fourth Five-Year Plan—A Draft Outline, *op. cit.*, p. 127.

Transfers

The land reform surveys which have been made under the aegis of the Research Programmes Committee of the Planning Commission have brought out that transfers have taken place on a considerable scale with the intention of circumventing ceiling on land holding. The Second Five-Year Plan emphasized that each State should give urgent attention to the effect of malafide transfers made during the past 2 or 3 years, and consider action needed to prevent such transfers in the immediate future. Transfers of lands which had already taken place, should be reviewed. The

Standing Committee of the National Development Council also recommended at its meeting held in September, 1957 that adequate safeguards should be provided for preventing evasion.

In some States, transfers made after the introduction of the Bill or the publication of the Bill will be disregarded such as in Assam, Kerala, Madras, Maharashtra, Uttar Pradesh and Tripura. Transfers will be disregarded with retrospective effect in Gujarat with effect from January 15, 1959; former Punjab area from April 15, 1953; West Bengal from May 5, 1953; (A provision for taking over surplus lands of ryots and under-ryots was included by the amendment of 1955); Delhi from February 10, 1959; Himachal Pradesh from April 1, 1952; and Manipur from January 15, 1959. In other States, there is no provision for disregarding transfers made before the commencement of the ceiling law for the purpose of determining surplus land. In Mysore, transfers can take place even after the enactment of legislation. In Madhya Pradesh and Orissa, the provisions go further and permit owners to transfer their surplus land to specified categories of persons within specified periods.

The provisions for disregarding transfers will not apply to partitions, unless there is a specific provision for regulation of partitions. The partitions will not have any material effect on surplus lands in cases where ceiling applies to the aggregate lands held by a family, family being defined to include husband or wife, dependent children or grand-children, as even after partition the lands will remain within the family and will thus be taken into account in determining the surplus land of the family.

Compensation for Acquisition of Surplus Lands

In all States except Jammu & Kashmir, a provision has been made for the payment of compensation for the acquisition of surplus lands. The provisions in the various Acts regarding compensation for acquisition of surplus lands generally follow five different patterns: (i) The compensation has been fixed as a multiple of assessment in Assam (50 times), Gujarat (12 to 200 times), Madhya Pradesh (50 to 20 times, on a graded slab basis, the slab being related to the rate of land revenue applicable to different classes of land), Maharashtra (55 to 390 times the assessment depending upon the class of land and locality), Rajasthan (30 to 20

times the rent-rate on slab basis depending upon extent of surplus land), Uttar Pradesh (in the case of *Bhumidhars*, 80 times the land revenue or 40 times the hereditary rate whichever is greater, plus 20 times the difference between hereditary rate and the land revenue; and in the case of *Sirdars*, 20 times the land revenue determined at the hereditary rate plus 20 times the difference between the hereditary rate and the land revenue) and Himachal Pradesh (48 times). (ii) It has been fixed as a multiple of rent as in Pepsu where it is between 9 to 12 times the fair rent payable for the land on a sliding scale for the first 50 standard acres of surplus land. (iii) It has been fixed as a multiple of income in the Andhra Pradesh, 5 to 3 times the gross income on a sliding scale depending on extent of land. In Mysore it is 10 times the net income, in Madras 12 to 9 times the net income on a graded slab basis, in West Bengal, 20 to 2 times the net income and in Delhi, Manipur and Tripura, 20 times the net income. (iv) It is related to the market value in Kerala (varying between 25 to 60 per cent of the market value) and Orissa (full market value). (v) It has been provided at specified amounts for different classes of lands as in Bihar (the amounts varying between Rs. 50 and Rs. 900 per acre).

With regard to payment of purchase price by allottees, the amounts payable by them are specified in the law in the case of Madhya Pradesh, Mysore, Kerala and Orissa. In other cases, the conditions of allotment and the amount recoverable are left to be prescribed in the Rules.

Apart from the surplus lands above the ceilings, a sizable area of cultural waste lands had vested in the State Governments on the abolition of intermediaries. Such lands had already belonged to the Government in ryotwari areas. During the past 15 years, about 10 million acres of such land are reported to have been distributed to landless agricultural workers. Surveys are being undertaken by the Union Ministry of Food and Agriculture and the State Governments to locate more lands for distribution.[29]

CONCLUSION

Although considerable progress has been made in the enactment of legislation for land reform, it cannot be said that the

29 Fourth Five-Year Plan — A Draft Outline, *op. cit.*, p. 132.

problem has been satisfactorily solved either in terms of providing an efficient system of land use and management or in terms of evolving a stable social structure in rural areas. The objectives of land reform, according to the Second Five-Year Plan, are: 'firstly, to remove such impediments upon agricultural production as arise from the character of the agrarian structure; and secondly, to create conditions for evolving, as speedily as possible, an agrarian economy with high levels of efficiency and productivity.' The legislative reforms of the last fifteen years have only cleared the ground, as it were for the more positive steps which will have to be taken to attain the above objectives. Moreover, legislation is one thing, implementation of the reforms, another. Many obstacles arising from the age-old rigidity of the rural social structure come in the way of speedy and satisfactory implementation of the new legislation. In a number of cases the protection given to the tenant has not benefited him in practice because of the right of resumption given to landlord, the exercise of which has converted the tenant into an agricultural labourer and the landlord into the so-called 'personal cultivator.' In anticipation of legislative reforms, large-scale evictions and transfers of land have taken place with a view to defeating the provisions of law. At present, a large area is cultivated through informal tenancy arrangements and such tenants do not enjoy any benefits of tenancy reform. It is possible that the net immediate impact of the spate of land reform legislation may have been to reduce productive efficiency. Land reform measures should, therefore, be accompanied by appropriate steps to increase the productivity of agriculture by promoting more efficient methods of cultivation and provision of adequate credit and marketing facilities.

CHAPTER IX

SIZE OF HOLDINGS AND PATTERN OF LAND TENURE*

Perhaps the most important factor which affects the character of farming and the returns from agriculture is the size of holding or the operational unit of cultivation. India is predominantly a country of small holdings. Doubts have been expressed regarding the capacity of the thousands of extremely small and fragmented holdings to step up productivity. There are some authorities who believe that "none of the problems of inadequate or disproportionate equipment, of backward technique and efficiency, of under-development and wasted labour, of poverty and exploitation can be solved as long as the bulk of farming units are small."[1]

SIZE OF HOLDINGS

The average size of holding for the country as a whole and for individual States is shown in Table I. On the basis of the results of 1961 Census, the average size of holding for India works out to 7.39 acres. But according to the 16th Round of the National Sample Survey, the size was 6.65 acres in 1959-60 as against 7.53 acres of the 8th Round in 1953-54. Considerable variations in the average size of holding are, however, observed in various States. Thus the States of Punjab, Rajasthan, Madhya Pradesh, Gujarat, Maharashtra and Mysore falling more or less in the North-Western and South-Western Regions of India, have a relatively bigger size of holdings, the average size being 3 to 4 times that in the States in the Eastern Regions and 5 to 7 times that in Kerala which has the lowest operational unit of cultivation—1.83 acres.

* For the preparation of this chapter we have freely drawn upon P. S. Sharma's paper on "A Study of the Structural and Tenurial Aspects of Rural Economy in the Light of 1961 Census," published in *Indian Journal of Agricultural Economics*, Vol. XX, No. 4, October-December, 1965 and B. R. Karla's paper on "Regional Variations in Policy regarding Size of Agricultural Holding," published in *Indian Journal of Agricultural Economics*, Vol. XX, No. 2, April-June, 1965.

1 D. R. Gadgil, Presidential Address, *Indian Journal of Agricultural Economics*, Vol. X, No. 1, March, 1955, p. 28.

TABLE I

AVERAGE SIZE OF CULTIVATED HOLDING IN INDIA

(*in acres*)

State	Household operational holding (1960-61)	16th Round operational holding (1959-60)	8th Round Agricultural holding (1953-54)
1	2	3(a)	3(b)
Jammu & Kashmir	3.84	3.87	3.98
Punjab	13.78	11.17	11.68
Rajasthan	16.01	13.79	16.94
Uttar Pradesh	5.27	4.60	4.83
Madhya Pradesh	10.60 (Madhya Pradesh, Madhya Bharat, Vindhya Pradesh)	10.01 (Madhya Pradesh, Madhya Bharat, Vindhya Pradesh)	12.27
Madhya Bharat			14.23
Vindhya Pradesh			8.72
Bihar	4.80	3.99	4.14
Orissa	5.19	4.61	5.08
West Bengal	4.10	3.88	3.57
Assam	4.75	4.13	5.42
Maharashtra	12.87	13.06	12.62* (Maharashtra and Gujarat)
Gujarat	12.53	11.98	
Andhra	8.04	6.64	6.51
Hyderabad	—	—	15.51
Mysore	10.48	9.65	7.98
Kerala	8.83	1.96	1.83**
Madras	4.58	3.89	4.15
All-India	**7.39**	**6.65**	**7.53**

* Bombay and Saurashtra.

** Erstwhile Travancore and Cochin State.

Source: Quoted in P. S. Sharma, "A Study of the Structural and Tenurial Aspects of Rural Economy in the Light of 1961 Census," *op. cit.*

The comparison between the National Sample Survey data on the size of holdings given in the 8th and the 16 Rounds indicates that the average size of operational holding has gone down from 7.53 acres in 1953-54 to 6.65 acres in 1959-60. The rapid growth of population has resulted in the worsening of the land-labour ratio. During the last decade, 1951-61, the population increased by 21.79 per cent and the number of cultivators by 40.86 per cent while cultivated area increased by only 20 per cent. The sub-division of ownership holdings through inheritance and transfers generally results in the break-up of ownership as well as operational holdings. During 1951-61 the proportion of workers engaged in agriculture to total workers increased from 72.15 per cent to 73.13 per cent whereas the objective of the

Government policy is to reduce the proportion of agricultural labour force to 60 per cent of the total by 1975-76. On the basis of comparative data collected through the 8th and the 16th Rounds of the National Sample Survey, the number of operational holdings increased by 4.5 million between 1953-54 and 1959-60 although no increase in area was reported.

Distribution of Holdings

The inequality of distribution in land is indicated by the area of land comprised in different size-groups. The distribution pattern of holdings and area is uneven, more so in small-sized and large-sized holdings. Generally speaking, the proportions of households exceed the proportions of area in small-sized holdings. The reverse tendency has been observed in large-sized holdings (Table II).

TABLE II

CUMULATIVE PERCENTAGE DISTRIBUTION OF OPERATIONAL HOLDINGS AND OF AREA

Size-group (acres)	Number	Area
Up to 1.00	19.42	1.32
5.00	62.96	18.88
10.00	81.81	38.83
15.00	89.42	52.68
25.00	95.26	69.30
50.00	98.93	87.82
All Sizes: 100.00	100.00	100.00

Source: The National Sample Survey: Sixteenth Round, July 1960 — June 1961, Number 113 — Tables with Notes on Agricultural Holdings in Rural India, Cabinet Secretariat, Government of India (1967), p. 21.

While 19.42 per cent of holdings operating one acre or less have command over only 1.32 per cent of the total area, 1.07 per cent of holdings above 50 acres have as much as 12.18 per cent of the land under them. As many as 62.96 per cent of the households — nearly two-thirds — cultivate less than 5 acres and the area cultivated by them does not exceed 18.88 per cent of the cultivated area. Assuming that a holding of 10 acres and more would be generally considered to be economic under the present technique of cultivation, as much as 61.17 per cent of the total cultivated land was being operated in economic units. Thus,

although about two-thirds of all the households have land less than 5 acres, at least two-thirds of the land in rural areas was being cultivated in units which could not be characterised as uneconomic. The preponderance of uneconomic farmers would naturally mean numerical preponderance of small farms. Viewed in the context of the total cultivated land, it cannot be said that uneconomic farms are a characteristic or a typical feature of Indian agriculture. The fact that in spite of heavy pressure of population on land the bulk of the land continues to be cultivated in fair sized units has significance in the understanding of the problem of concentration.

The apparent concentration of ownership is a reflection of the phenomenon of pressure of population. Given the scarcity of land and the population pressure, ownership of even a fair sized farm by a small percentage of cultivators would leave large numbers crowding at the bottom with very little land. The crowding at the bottom of the agricultural ladder is thus not necessarily the consequence of the top few occupying excessive areas. If ownership or operation of 100 acres or more of land — irrespective of its quality—is considered excessive, no more than 6 to 7 per cent of cultivated area would come under this category; with the limit placed at 50 acres, the percentage would be about 12. The crux of the matter is that there are far too many persons who in the absence of alternative opportunities of gainful employment have taken refuge at the bottom of the ladder. It is essentially a phenomenon of pressure of population and under-development of the economy. Ceilings on land and redistribution would not therefore provide a solution to the problem of "excessive" ownership.

PATTERN OF OWNERSHIP AND TENANCY

In the context of extensive land reforms in India it may be of interest to study the distribution of ownership and tenancy. The National Sample Survey data of the 8th and the 16th Rounds reveal some interesting features in this connection. According to the 16th Round, the percentage of operated area owned was 87.47 per cent of the total cultivated area as against 79.66 per cent at the time of the 8th Round in 1953-54. Thus there was a net decline in leased-in area from 20.34 per cent in 1953-54 to

12.53 per cent in 1959-60. The decline in leased-in area is almost evenly spread over different size classes of operational holdings.

The most significant fact to be noted in regard to tenancy is that although the extent of mixed tenancy is sizable, pure tenancy is insignificant (Table III). For the country as a whole, only 4.22 per cent of the cultivated land was under pure tenancy and only 7.7 per cent of the total rural households were pure tenants. The proportion of area under pure tenancy varied between 2.55

TABLE III

PERCENTAGE DISTRIBUTION OF CULTIVATING HOUSEHOLDS AND CULTIVATED AREA BY INTEREST IN LAND IN RURAL AREAS: 1960-61

State	Ownership		Pure Tenancy		Mixed Tenancy	
	h	a	h	a	h	a
1	2	3	4	5	6	7
Jammu & Kashmir	58.21	53.06	7.90	7.05	33.89	39.89
Punjab	51.66	51.40	13.76	9.77	34.58	38.83
Rajasthan	88.96	89.01	3.87	2.55	7.17	8.44
Uttar Pradesh	89.53	91.39	3.22	1.69	7.25	6.92
Madhya Pradesh	80.21	80.09	5.55	3.28	14.24	16.63
Bihar	67.82	67.82	7.35	7.35	24.83	24.83
Orissa	77.83	78.09	4.89	2.87	17.28	19.04
West Bengal	65.64	65.05	13.34	10.18	21.02	24.77
Assam	62.91	65.37	15.39	9.36	21.70	25.27
Gujarat	86.54	86.67	4.07	2.62	9.39	10.71
Maharashtra	78.49	77.31	7.29	3.84	14.22	18.85
Andhra Pradesh	78.98	76.68	6.28	3.68	14.74	19.64
Mysore	70.47	67.38	10.11	4.84	19.42	27.78
Kerala	54.90	42.79	32.53	34.72	12.57	22.49
Madras	76.21	78.08	10.96	6.64	12.83	15.28
All-India*	**76.84**	**77.59**	**7.70**	**4.22**	**15.46**	**18.19**

h = Cultivating households.

a = Cultivated area.

* Inclusive of Union Territories in respect of households but in the case of cultivated area it is exclusive of Union Territories.

Source: 1961 Census Household Schedule B-XI, quoted in P. S. Sharma's paper, *op. cit.*

per cent in Rajasthan to as high as 34.72 per cent in Kerala. West Bengal had 10.18 per cent of the cultivated area under pure tenancy, Punjab 9.77, Assam 9.36, Bihar 7.35, Jammu & Kashmir 7.05 and Madras 6.64. The percentage of rural house-

holds with pure tenancy varied between 3.22 in Uttar Pradesh to 32.53 in Kerala. In Assam 15.39 per cent of the rural households reported to be pure tenants, in Punjab 13.76, in West Bengal 13.34, in Madras 10.96 and in Mysore 10.11. Again in pure tenancy holdings Kerala, Bihar, Madras, Uttar Pradesh and West Bengal shared among themselves more than half of the total one acre pure tenancy holdings as these States maintain their predominant position in small-sized holdings. Punjab, Rajasthan and Maharashtra have a relatively larger percentage of large-sized pure tenancy holdings.

Mixed tenancy is fairly widespread. The percentage of the total cultivated area under mixed tenancy varied between 6.92 in Uttar Pradesh to 39.89 in Jammu & Kashmir. In Punjab, this was as high as 38.83, in Mysore 27.78, in Assam 25.27, in Madhya Pradesh 24.83, in West Bengal 24.77 and in Kerala 22.49. Punjab led the rest of the States with over one-third of the households in mixed tenancy, followed by Jammu & Kashmir (33.89), Bihar (24.83), Assam (21.70), West Bengal (21.02) and Mysore (19.42). Bihar and Uttar Pradesh have a significant proportion of the total one acre mixed tenancy holdings. In the subsequent small-sized classes, in addition to the above two States, West Bengal and Madras also come into the picture. In the large-sized mixed tenancy holdings Punjab, Madhya Pradesh, Maharashtra, Mysore and Andhra Pradesh are having among themselves a significant proportion.

Of all the land-owning rural households, 81.35 per cent with 69.23 per cent of land do not lease out land at all; 16 per cent lease out a part of their land and only 2.65 per cent lease out all their land amounting to 1.84 per cent of the total area owned by all rural households. Small as well as big landowners lease out land and although the percentage of leasing out families increases with the increase in the size of ownership holdings, the percentage of such families in the group owning less than one acre was 9.42 and in the group owning between 2.50 — 4.49 acres it was as high as 22.. Nearly 70 per cent of the total leased out area by rural households was contributed by those who owned and operated less than 10 acres and out of this 70 per cent, 36 per cent was contributed by those households whose

per household area owned was one acre.[2] For all-India, about half of the leased-in area was contributed by non-resident owners. Land was leased-in by small as well as large operators; but more than 60 per cent of the total leased-in area was with those who operated a holding of more than 10 acres. As much as 18 per cent of the land operated by the group with more than 50 acres was taken on lease.[3] The above analysis should explode the belief firmly held even in the highest quarters of policy-makers that those who lease-in land (tenants) are necessarily small farmers and those who lease out are big absentee land-owning rentiers.

SUBDIVISION AND FRAGMENTATION

The disadvantages of the small size of holdings from the point of view of agricultural development become aggravated with their excessive fragmentation. A study by the F.A.O. of the United Nations[4] defines fragmentation as a stage in the evolution of the agricultural holdings, in which a single farm consists of numerous discrete parcels, often scattered over a wide area. This phenomenon occurs in most parts of the world where cultivation is long established. It is not peculiar to any particular form of land tenure. It has been usually associated with congestion of rural population and laws of inheritance which prescribe distribution of property among surviving relatives according to a fixed share. Other contributory causes in India were: (1) the evolution of a code of juristic rights in the recent past which emphasized individual rights and ownership, (2) the gradual breaking up of the joint family system and insistence on the partition of land, (3) the liability of the registered holder to pay the land revenue for the piece of land registered in his name, and (4) acquisition of holdings by moneylenders in lieu of debt.

2 The National Sample Survey: Eighth Round: July 1954 — March 1955, Number 10—First Report on Land Holdings, Rural Sector, Cabinet Secretariat, Government of India (1958), pp. 17-23.

3 The National Sample Survey: Eighth Round: July 1954 — April 1955, Number 30 — Report on Land Holdings (2) (Operational Holdings in Rural India), Cabinet Secretariat, Government of India (1960), pp. 20-21.

4 The Consolidation of Fragmented Holdings, Food and Agriculture Organization of the United Nations (1950), p. 5.

The latest information on the extent of fragmentation available from the 16th Round of the National Sample Survey is given in Table IV.

TABLE IV

ESTIMATED NUMBER OF PARCELS AND ITS AVERAGE AREA BY SIZE-GROUP OF OPERATIONAL HOLDING: 1959-60 (ALL-INDIA)

Size-group of operational holding (acres)	Number of parcels per operational holding	Average area of parcels 0.00 acres
Less than 0.49	1.61	0.15
0.50 — 0.99	2.82	0.26
1.00 — 2.49	4.41	0.38
2.50 — 4.99	6.30	0.58
5.00 — 7.49	7.60	0.80
7.50 — 9.99	8.30	1.04
10.00 — 12.49	8.47	1.31
12.50 — 14.99	8.43	1.62
15.00 — 19.99	8.87	1.93
20.00 — 24.99	8.66	2.55
25.00 — 29.99	8.50	3.21
30.00 — 49.99	9.06	4.12
50.00 and above	9.39	8.06
All Sizes	5.82	1.14

Source: The National Sample Survey: Sixteenth Round, Number 113 — Tables with Notes on Agricultural Holdings in Rural India, *op. cit.*, p. 22.

The common remedial measure suggested for fragmentation is consolidation of holdings which consists of realignment of isolated strips of land into a compact block by substitution by an exchange of land.

CONSOLIDATION OF HOLDINGS[5]

Review of Legislative Measures

The need for legislative measures for consolidation of the fragmented holdings and prevention of further fragmentation was felt more than five decades ago in India. On the eve of the First Five-Year Plan, legislation regarding consolidation of

5 The subsequent discussion is largely based on the article on "Consolidation of Holdings in India — Review of Progress," published in the *Reserve Bank of India Bulletin*, Vol. XVII, No. 6, June, 1963, pp. 790-803.

holdings was in force in the then Bombay State, Punjab, Madhya Pradesh, Hyderabad and U.P. After the commencement of the First Plan, consolidation legislation received fresh impetus and Acts were passed in the States of Orissa, West Bengal, Rajasthan and Himachal Pradesh. In Orissa, the Agriculture Act of 1951 and in West Bengal the Land Reforms Act of 1955 included provisions relating to consolidation of holdings. In 1953, the U.P. Consolidation of Holdings Act was replaced by a fresh Act which was further amended by the Consolidation of Holdings Act of 1962. During the Second Plan period, the Hyderabad Prevention of Fragmentation and Consolidation of Holdings Act of 1956 was passed and a bill to extend this Act to Andhra Pradesh was moved in the Andhra Pradesh Legislative Assembly but it lapsed. Consolidation of Holdings Acts were passed in Bihar in 1956 and in Mysore and Assam in 1960. Jammu & Kashmir also followed with similar legislation in 1962. In the States of Madras and Kerala, there is no legislative provision for consolidating fragmented holdings.

Legislative Provisions

In the early 'twenties, the legislation was permissive and aimed at the exchange of plots on a voluntary basis. In Punjab. co-operative societies registered under the Co-operative Societies Act, 1912 were expected to take up consolidation purely on a voluntary basis. Recognising the ineffectiveness of voluntary measures, an element of compulsion was introduced during the 'thirties. The C. P. Consolidation of Holdings Act, 1928, the Punjab Consolidation of Holdings Act, 1936 and the U.P. Consolidation of Holdings Act, 1939 fall under this category. Under these Acts, the scheme of consolidation was made binding on all permanent right holders, if not less than one-half of the permanent holders holding not less than two-thirds of the occupied area agreed to the scheme. These three Acts were subsequently replaced by new legislation. The Bombay Prevention of Fragmentation and Consolidation of Holdings Act of 1947, for the first time, empowered the Government to initiate consolidation proceedings without the necessity of taking prior consent of the cultivators concerned. The other States in which such comprehensive provisions are provided in the legislation are Punjab,

Uttar Pradesh, Rajasthan, Hyderabad area of Andhra Pradesh, Mysore and Jammu & Kashmir. Under the Madhya Pradesh Land Revenue Code, 1959, any two or more tenure holders in a village, holding together not less than the minimum prescribed area may apply for consolidation of their holdings. Under Section 206 (3) of the Code, if two-thirds of the tenure holders in a village apply for consolidation of their holdings, the application is deemed to be the application on behalf of all the tenure holders of the village. Under Section 39 of the West Bengal Land Reforms Act, 1955, and under Section 3 of the Assam Act, consolidation operations can be initiated only after two-thirds or more of the owners of the holdings proposed to be consolidated agree to it. Thus consolidation laws in Madhya Pradesh, Assam and West Bengal do not provide for consolidation at Government's initiative. In view of the need to accelerate the pace of progress of consolidation of holdings and thereby increase efficient utilisation of land resources, it appears desirable that consolidation schemes be initiated by the Government instead of being left entirely to the voluntary efforts of cultivators.

The definition of consolidation adopted in different States falls broadly in two categories. At one extreme are the State like Punjab and Uttar Pradesh where consolidation is regarded as an aspect of an integrated programme of village development and at the other are States like Maharashtra, Gujarat, Bihar, Madhya Pradesh, Orissa, West Bengal and Assam where consolidation work confines itself to mere re-grouping of fragmented holdings to form compact holdings. The advantages of combining consolidation work with the other measures, such as replanning the entire village and reserving lands for common purposes as in Punjab, are that both the grouping of scattered plots and integrated improvement of the village are ensured at one stretch. However, this course has its own difficulties. As observed by the Hyderabad Land Commission on Consolidation of Holdings (1955), "though much attractive and, therefore, desirable, this involves huge expenditure in the *de novo* survey of the entire village and creates considerable complications in deducting the area required for the common purposes from every holder and settlement of compensation for it."

Legislation of this type can be effective if public support is forthcoming in a large measure. It is, therefore, necessary to create a favourable public opinion. In this context, the significance of a village advisory committee cannot be over-emphasized. Except West Bengal, in all other States there is provision for setting up an advisory committee or consultation with village panchayat. The village committees have so advise generally on all matters concerning consolidation and in particular, to help in the appointment of guardians of minors, etc., and to assist in the classification and valuation of fields, in the preparation of the consolidation scheme and in the formation of new holdings to be allotted to individuals. Though these committees are advisory in character, their advice is generally accepted.

After the constitution of village advisory committee, consolidation operations begin with certain preliminary steps. Most important of these steps is the correction of records and preparation of preliminary statements. The Acts of Uttar Pradesh, Bihar, Jammu & Kashmir and Himachal Pradesh specifically provide for revision and correction of records of rights and maps. The corrections made in the maps and records are to be brought to the notice of villagers and finalised in consultation with them. This step of consolidation procedure takes considerable time with consequent delay in actual consolidation work. Hence, the Planning Commission has suggested that the regions which get priority for consolidation may be divided into three areas, namely, (1) regions where consolidation can be taken up, (2) regions which will come under consolidation next but where the preliminary steps mentioned above will be taken up simultaneously and (3) remaining areas where consolidation will follow later on. The Commission has further suggested that the revenue staff from region (3) which will be substituted by new staff could be utilised for expediting work in region (1) and normal revenue staff in region (2) should bring the records up-to-date by the time consolidation is initiated there.

After the records are brought up-to-date, the Consolidation Officer prepares a draft scheme of consolidation. In Punjab, however, before preparation of the draft scheme, one more step called 'rectangulation' is involved. Irregular fields of old shape are replaced by rectangular fields of approximately one acre

size. The object of rectangulation is to facilitate the partition of land in consolidation proceedings and also to provide right holders with fields of convenient size for irrigation and cultivation. With straight-water course and even shaped fields, there is much greater convenience and much less waste in the use of water. There are also other advantages such as elimination of boundary disputes, better farm management, etc. However, rectangulation is done in Punjab only. In other States, the shape of existing fields is not altered and individual blocks are formed either by amalgamating them or, where necessary, by partitioning them. Although the process of rectangulation is costly and time ,consuming, its advantages far outweigh the cost and efforts involved.

The next step in some States is preparation of a consolidation scheme by a Consolidation Officer and its publication inviting objections from affected persons. In Uttar Pradesh and Jammu & Kashmir, however, the preparation of a statement of principles precedes the preparation of a statement of proposals, *i.e.*, the consolidation scheme proper. If no objections are received, the scheme is confirmed. In case objections are received, the Consolidation Officer considers the objections and submits a revised scheme to the Settlement Commissioner who is empowered to consider the objections and confirm the scheme. In most of the States the Settlement Commissioner is empowered to confirm the scheme. In Gujarat, Maharashtra and Mysore, however, every time the scheme is amended, it has to be published and the power of confirmation, when objections continue, lies with the Government. This procedure is likely to result in delays in implementing the scheme.

Since consolidation involves planned and systematic exchange of land, new and compact blocks being given in place of the previous scattered plots held by the individual cultivator, proper valuation of land is very important. Plots of land vary greatly in texture and quality of soil, facilities of irrigation, productivity, distance from the village and other advantages. Hence it is essential to have a method of valuation by which different classes of land can be reduced to a comparable basis. The method should be as objective as possible to reduce the chances of error by individual judgment, caprice or dishonesty and should be simple so that the villagers can understand it without much diffi-

culty. This minimises the chances of discontent and disputes. The methods of valuation used in different States fall into the following three categories: (1) valuation on the basis of rental value (assessment), (2) valuation on the basis of market value and (3) valuation on the basis of productivity. For example, the first method is used in Uttar Pradesh, the second in Maharashtra and Gujarat and the third in Punjab, Madhya Pradesh, Delhi and Himachal Pradesh. Legislation in all the States provides for payment of compensation to the owner who is allotted a holding of less value than that of his original holding.

Prevention of Fragmentation

While it is necessary to consolidate the scattered holdings into compact blocks, it is as, and even more, essential to make statutory provisions for preventing the recurrence of fragmentation in future. As the forces that lead to fragmentation are constantly at work, some steps are necessary to prevent further deterioration of the situation. Fragmentation has three aspects: (1) diminution in the size of a holding, (2) scattering of a holding into widely separated plots and (3) diminution in the size of any plot comprised in a holding to such an extent that it is unprofitable to cultivate it. Diminution in the size of a holding generally results from partitions consequent upon inheritance, transfer by sale, mortgage, gift or lease. It frequently happens that during partitions, not only the total holding is subdivided into smaller units but even individual plots get subdivided into fragments due to an anxiety on the part of the co-sharers to get a share of each class of land. Similarly, unregulated transfers also result at times in tiny plots. Legislation, therefore, generally tries to prevent such fragmentation by regulating partitions, transfers and leases.

As a first step towards prevention of fragmentation, the Acts in different States authorise the State Governments to determine a standard area. The standard area is a plot of minimum area which can be cultivated profitably. After determining the 'standard area,' all plots of land which are smaller than 'standard area' are declared fragments and entered in the village records. Various restrictions are put on the transfer, partition and lease of holdings which are of standard size as well as those which are fragments. Provision is also made to transfer a fragment to the

contiguous holder or cultivator with a view to merging it with the adjoining holding. The transactions in contravention of the provisions are declared void. In some States, there is also a provision for the imposition of a fine. In all the States except Madras, Kerala, Jammu & Kashmir and Himachal Pradesh, legislative provisions exist for prevention of fragmentation.[6] Evils of fragmentation are sought to be controlled through necessary provisions in the Consolidation Acts in Assam, Bihar, Gujarat, Rajasthan and Telangana area of Andhra Pradesh, while in Uttar Pradesh and West Bengal it is done under Land Reforms Act. In Madhya Pradesh, the Land Revenue Code contains the necessary provisions. In Assam, the provisions for prevention of fragmentation apply only after land is consolidated; in areas where consolidation operations have not been initiated, there is no check on further fragmentation.

Cost of Consolidation

As in the case of other schemes, an important question with regard to consolidation is the cost of operation and the ways of meeting it. In Punjab, where consolidation schemes are integrated with other schemes, such as the setting a part of land for village roads, drainage, irrigation works, schools, panchayat, etc., lands required for these purposes are obtained in the form of proportionate contributions by cultivators and no compensation has to be paid. Labour for construction of village roads, tanks, etc., is also contributed voluntarily by the villagers themselves and no cash payments are required. Similarly, exchange of land is accompanied where other adjustments are not possible, by cash payments wherever value of lands exchanged differs. These payments also do not form part of cost of consolidation. The cost of consolidation thus includes only the cost incurred on the special staff and contingencies for resurvey and measurements wherever necessary and for the actual work of consolidation itself.

For inter-State comparison of cost of consolidation, we may examine the cost per acre of land consolidated. Data given in Table V show that these costs varied from State to State.

6 *Vide* Progress of Land Reform, Planning Commission, Government of India (1963), pp. 26-29 and 92-98.

TABLE V
COST OF CONSOLIDATION

State/Union Territory	Total expenditure incurred up to the end of 1961-62 (Rs. in lakhs)	Expenditure incurred per acre in Rs.		
		Prior to Second Plan period, *i.e.*, since inception up to 31-3-1956	At the end of the Sesond Plan (1960-61)	During 1961-62
Andhra Pradesh	15.8	—	3.53	3.41
Bihar	N.A.	—	15.90	23.15
Gujarat	47.0	7.03	6.24	5.42
Madhya Pradesh	32.1	0.52	2.56	3.47
Maharashtra	89.1	6.95	5.68	2.44
Mysore	16.5	4.20	1.85	1.60
Punjab	672.4	5.46	3.66	4.76
Rajasthan	54.4	—	3.00	1.80
Uttar Pradesh	972.2	40.66	14.25	9.61
Delhi	N.A.	0.59	N.A.	N.A
Himachal Pradesh	15.6	15.25	8.08	9.00
Total	1,915.1			

Source: *Reserve Bank of India Bulletin*, Vol. XVII, No. 6, June, 1963.

As may be seen from Table V, the cost during 1961-62 was the highest in Bihar at Rs. 23.15 per acre, and it was the lowest in Mysore at Rs. 1.60 per acre. In almost all the States, cost of consolidation per acre witnessed a declining trend. As more experience is obtained and the programme gets momentum, the cost tends to fall. Differences in cost per acre between different States are due to differences in efficiency and economy in the arrangements made and differences in local conditions and items of work taken up in consolidation. As regards the source of finance for meeting the expenses of consolidation, in Maharashtra, Gujarat and parts of Mysore where the Bombay Act is applicable the costs of consolidation are entirely met by the State Government. In all other States, the costs are realised from the land holders as arrears of land revenue.

Progress of Consolidation

The Third Plan set a target for the consolidation of 28 million acres which was likely to be fully achieved. About 25.5 million acres were consolidated during the first four years of the Third Plan as shown in Table VI.

TABLE VI

PROGRESS OF CONSOLIDATION OF LAND HOLDINGS

(in million acres)

State	Area consolidated up to 1960-61	Third Plan target (area)	Area consolidated between 1961-62 and 1964-65	Net area sown (1964-65)	Percentage of column (4) to column (5)
1	2	3	4	5	6
Andhra Pradesh	0.31	0.45	0.50	28.38	1.8
Assam	—	0.02	—	5.69	—
Bihar	0.06	0.50	0.09	21.11	0.4
Gujarat	1.12	1.20	0.64	23.70	2.7
Jammu & Kashmir	—	0.18	0.01	1.72	0.6
Kerala	—	—	—	5.03	—
Madhya Pradesh	3.82	2.50	1.43	41.35	3.5
Madras	—	—	—	14.90	—
Maharashtra	1.54	3.26	3.22	45.05	7.1
Mysore	0.99	1.16	0.59	25.75	2.3
Orissa	—	—	—	14.80	—
Punjab	14.73	7.82	7.11	18.90	37.6
Rajasthan	1.40	1.50	2.57	35.71	7.2
Uttar Pradesh	5.39	9.00	9.16	45.30	20.2
West Bengal	—	—	—	13.45	—
Delhi	0.13	0.04	—	0.28	—
Himachal Pradesh	0.13	0.38	0.18	0.68	26.4
Total	**29.62**	**28.01**	**25.50**	**341.52**	**7.5**

Source: Fourth Five-Year Plan—A Draft Outline, Planning Commission, Government of India (1966), p. 133.

Up to the end of the First Plan period only 10.5 million acres of land were consolidated and out of these more than one-half was accounted for by Punjab and about one-fourth by Madhya Pradesh. During the Second Plan period, rapid progress was recorded and the total area of land consolidated nearly trebled. Progress in consolidation up to 1964-65 was especially marked in Gujarat, Maharashtra, Mysore, Punjab, Rajasthan and Uttar Pradesh. In Andhra Pradesh, Madhya Pradesh and Himachal Pradesh also substantial progress was recorded.

In the Fourth Plan it is proposed to double the target and to provide for an outlay of Rs. 32 crores for consolidation of holdings. The distribution of the target by States is being worked out in consultation with the State Governments. In Punjab and Uttar Pradesh, the programme will have been completed over the entire

area of the State during 1966-71. Gujarat, Madhya Pradesh, Maharashtra and Rajasthan which have acquired wide experience in the field, should be in a position to accelerate the programme considerably. Some experience has also been gained in the Telangana area of Andhra Pradesh, in Bihar and in areas transferred to Mysore from the former State of Bombay. It should be possible to expand the programme substantially in these States. Other States should initiate preliminary steps and take up pilot projects in different regions to gain experience and demonstrate the potentialities of the programme so that it could be taken up in a big way in the Fifth Plan.[7]

Even though the attention paid to consolidation operations is increasing in recent years, more intensive efforts are required to solve the problem of fragmented holdings. A broad idea of the magnitude of the problem can be had from a comparison of the area consolidated till 1964-65 with the net area sown in each State, as shown in Table VI.

Despite certain limitations in this type of comparison, the data in Table VI clearly show that it was only in Punjab that over one-third of the sown area has been consolidated. In Uttar Pradesh, one-fifth of the sown area and in Madhya Pradesh and Rajasthan about 7 per cent each has been consolidated. In other words, the problem of consolidation is still of a large magnitude in almost all the States except Punjab.

Thus the progress of consolidation of holdings has been uneven among the different States. In fact, there are still two States, namely, Madras and Kerala where legislation for consolidation and prevention of fragmentation has not been enacted. In some States, namely, Assam, Jammu & Kashmir, Orissa and West Bengal though the necessary legislation has been enacted, the scheme has not so far been taken up for implementation. Then again, there are a few States such as Bihar where, although the scheme has been implemented, the progress is poor. In view of the objectives set forth by the Working Group on Consolidation of Holdings to bring under consolidation during the course of the next fifteen years beginning with 1961-62, all areas where fragmentation presents a serious problem it is necessary to expedite the progress.

7 Fourth Five-Year Plan—A Draft Outline, *op. cit.*, p. 134.

CHAPTER X

COMMUNITY DEVELOPMENT AND PANCHAYATI RAJ

COMMUNITY DEVELOPMENT

Concept and Approach

No programme of economic development in India can have deep roots unless it reaches the villages where the mass of the population lives. Community Development and Rural Extension are designed to carry the message of development to the villages and to make them active participants in the tasks of development. Only by creating an active enthusiasm for development among the people can continuing and accelerating growth on a democratic basis be ensured. The First Five-Year Plan stated: "Community Development is the method and Rural Extension is the agency through which the Five-Year Plan seeks to initiate a process of transformation of the social and economic life of the villages." The programme which was initiated in 1952, had four basic aims : (*a*) creation of a progressive outlook among the rural population, (*b*) inculcating habits of co-operative action, (*c*) securing increased production and (*d*) promoting increased employment.[1] It sought to combine in itself the welfare and the developmental aspects of economic change. Active participation of the people, with the advice given by governmental agencies, is the very foundation of Community Development. While the National Extension Service is concerned mainly with "interesting the cultivator in ways of improving the techniques and organisation of farming and helping him to adopt these,"[2] Community Development aims at a broad-based and co-ordinated development of all aspects of village life including rural industries and social services like education and health and the development of transport and communications.

1 Programme Evaluation Organisation: Evaluation Report on the First Year's Working of Community Projects, Planning Commission, Government of India (1954), p. 45.

2 *ibid.*, p. 23.

Earlier Attempts

The basic idea underlying intensive development aimed at securing co-ordinated development of rural life as a whole in India is not new. As early as 1928, the Royal Commission on Agriculture stressed that no lasting improvement in rural life is possible if its different aspects are treated in isolation.[3]

Examples of non-official efforts at rural reconstruction are found in Mahatma Gandhi's Wardha Scheme of Education, Poet Rabindranath Tagore's rural reconstruction scheme in Sriniketan, the rural reconstruction centre in the former Baroda State, the Sevagram Ashram in Madhya Pradesh, the Firka Development Scheme in Madras, the Sarvodaya Centres in Bombay and in Etawah and Gorakhpur in Uttar Pradesh, Spencer Hatch's Scheme at Martandum (Trivandrum), the work by various Christian Missions, etc. However, rural reconstruction activities before the attainment of Independence were limited in scope and coverage in spite of Tagore's emphasis on, and Sriniketan's attempt to, develop a total programme. Moreover, rural reconstruction activity among the villagers themselves did not come into prominence in the official efforts. The average cultivator was not brought actively into a co-operative effort at improvement; the departments concerned failed to organise the rural people themselves for a collective endeavour. The poor response to the "grow more food" campaign illustrated the weakness of the organisation. If there had been peasants' organisations, associations and chambers to inspire their confidence and claim their loyalty, the results would undoubtedly have been better.

Government's efforts to bring about improvement in rural areas were directed through several Development Departments such as Agriculture, Co-operation, Health, Education, etc. These, however, worked independently of one another and without a sense of common objective. The Grow More Food Enquiry Committee (1952), after a careful review of efforts towards improvement of the rural life of the villagers, came to the conclusion that agricultural improvement is an integral part of the wider problem of raising the level of rural life. The economic

3 Report of the Royal Commission on Indian Agriculture (1928), pp. 672-673.

aspects of village life cannot be detached from the broader social aspects; and agricultural improvement is inextricably linked up with a whole set of social problems. The Committee, therefore, recommended a scheme of development of village life covering all aspects and the organisation of a National Extension Movement covering the entire country within a period of 7 or 8 years.[4] This scheme was incorporated in the First Five-Year Plan of the nation, which stressed community development as a distinctive approach to these problems. For the first time, a centralised and co-ordinated policy was formulated in the Community Development Project and National Extension Service.

Basic Principles

The movement lays stress on the following basic principles: (i) In areas of intensive effort, developmental agencies of the Government should work together as a team in programmes which are planned and co-ordinated in advance. The activities comprised within the community development and national extension programme should be regarded as an integral part of a programme for improving all aspects of rural life. (ii) There has to be a co-ordinated approach to the villager, comprehending his whole life, through a common agent, *viz.*, the village level worker. (iii) While the official machinery would guide and assist, the motive force for improvement should come from the people themselves, the State assisting also with supplies, services and credit. (iv) The vast unutilised energy in the countryside should be harnessed for constructive work, every family devoting its time not only to its own programmes but also to programmes for the benefit of the community. (v) Programmes should be pursued intensively to gain the best results. Practically every agriculturist family should make its own contribution through a village organisation. (vi) The approach to the villager should be in terms of his own experience and problems, conceived on the pattern of simplicity, avoiding elaborate techniques and equipment, until he is ready for them. (vii) There should be a dominant purpose round which the enthusiasm of the people could be aroused and sustained. The aim should be to create in the rural population a burning desire for a higher standard of living — the will to live better. (viii) The

4 Report of the Grow More Food Enquiry Committee, Government of India (1952), Conclusions and Recommendations, pp. 6-28 and 68-71.

co-operative principle should be applied in its infinitely varying forms for solving all problems of rural life.[5]

In brief, the movement seeks to bring about a change of outlook in the following three directions: (i) increased employment and increased production by the application of scientific methods of agriculture, animal husbandry, etc., and the establishment of subsidiary and cottage industries; (ii) self-help and self-reliance and the largest possible extension of the principle of co-operation; and (iii) the need for community effort for building up community assets such as roads, tanks, schools, health centres, etc.[6]

The actual programme of work drawn up in furtherance of this movement has naturally undergone changes from time to time, specialy in regard to approach, duration and the amount and structure of the budget. Broadly, the patterns so far evolved in these respects have been of three types: the community projects — the initial pattern; the N.E.S. which soon replaced it; and, finally the pattern emerging after the report of the Balvantrai Mehta Team with its emphasis on integrated approach and *Panchayati Raj.* A brief account of the main features of these programme patterns is given here.

A separate section has been devoted to *Panchayati Raj* as it seeks to bring about far-reaching changes in the administrative system and methods of implementing the developmental programmes.

COMMUNITY PROJECTS

The programme was inaugurated on October 2, 1952 in 55 projects comprising 27,388 villages having a population of 16.7 million. Each Project Area was divided into 3 Development Blocks, a block consisting of about 100 villages and a population of about 60,000 to 70,000 spread over an area of 150-170 sq. miles. Each development block was to have a minimum administrative set-up consisting of the block development officer, extension officers for agriculture, animal husbandry and co-operation, two

5 First Five-Year Plan, Planning Commission, Government of India (1953), pp. 223-224; and V. T. Krishnamachari: Community Development in India (1958), p. 15.

6 Community Development in India, *op. cit.*, pp. 18-19.

social education organisers, an overseer with public health bias, 10 village level workers and some ancillary staff. The main lines of activity in a project are briefly divided into agriculture and related activities; irrigation; communications; education; health; supplementary employment; housing; training and social welfare.

The cost of a basic type of rural community project was estimated at Rs. 65 lakhs for a period of three years. In order to enable expansion of the programme in future, the Central Committee decided that the cost should not exceed Rs. 45 lakhs per project. The cost was shared between the Centre and the States in the proportion of 75 : 25 in respect of non-recurring expenditure and 50 : 50 in respect of recurring expenditure. After a period of three years, the Community Project areas were intended to become Development Blocks and the State Governments were expected to bear all the expenses of the development blocks after the third year. In the case of a national extension service block, the schematic budget was based on the outlay of Rs. 4.5 lakhs in three years, in addition to Rs. 3 lakhs as short-term loans.

NATIONAL EXTENSION SERVICE

There have been four stages in the spread of the National Extension Service (N.E.S.) as originally conceived. They are (i) the pre-extension stage. During this stage, local development programmes including those of local boards are organised to prepare the people for the N.E.S. These programmes are prepared in consultation with the people, who make a contribution in the form of labour and/or money. This is the stage of preparation. (ii) The second stage is when the N.E.S. is introduced in an area which is assisted by the Central Government on a permanent basis. (iii) The blocks in which successful results have been achieved with maximum popular co-operation are selected for intensive development for a period of three years. (iv) After this, the areas revert to the permanent N.E.S. stage. A programme was drawn up for starting 1,200 blocks during the First Plan period, 300 under the Community Project Scheme and 900 under the N.E.S., covering 120,000 villages and 75 million people or nearly one-fourth of the population within the operation of the extension service.

Integrated Block Pattern

With a view to examining critically the working of the programme and its relationship with the wider aspects of development and administration, a Study Team led by Shri Balvantrai Mehta was appointed by the Committee on Plan Projects in 1957. The Team recommended the abolition of the distinction between the N.E.S., Intensive Development and Post-Intensive Development and its substitution by Stage I Blocks with a life of six years, to be followed by a Stage II period (post-intensive) of six years. It also recommended that the original budget ceiling of Rs. 15 lakhs should be restored and in the second phase, the budget ceiling should be Rs. 5.5 lakhs. In view of limited financial resources, shortage of technical personnel and of supervisory staff, the decision to cover the whole country with development blocks by 1961 should be revised and the date extended by at least three years.

These recomendations of the Study Team were accepted by the Government of India with some modifications. In regard to the pattern of the programme, it was decided to have only two stages. Stage I is the intensive development phase wherein people's participation would be promoted and the Panchayat would be intimately associated with the formulation of plans for the respective areas. The growth and functioning of self-reliant rural communities would depend upon the degree of success attained in the first stage. In the second stage which is the post-intensive phase, the operation of the method of Community Development would be intensified in its fuller amplitude; the emphasis is more on community development than on development programmes. But each stage would be of five years' duration, in order to maintain the urgency and dynamism of the programme. The period of operation of Stage I would, however, be extended by one year in specific cases in case of necessity.

As regards financial allotment, having regard to past experience of the rate of expenditure, it was decided that the schematic budget for a block should be Rs. 12 lakhs for Stage I and Rs. 5 lakhs for Stage II. Under the revised programme pattern, the programme in the post-intensive development blocks would, from the beginning, be entrusted to statutory bodies at the

block or district level. In order to maintain the tempo of progress as also to achieve progressively increased development in the areas, at the post-intensive stage, development departments would be required to make increased block-wise allotment of funds in their charge. In regard to the rephasing of the expansion programme, the National Development Council decided that the programme should be staggered so as to cover the entire country by October, 1963. The Council also agreed to the introduction of a pre-extension stage for the programme with the intention of concerted effort on agriculture for one year.

The revised pattern of community development programme came into operation in April, 1959. A shift in emphasis has thus taken place so as to develop local leadership capable of assuming greater responsibility for development. In the formulation of the programme and the budget estimates for each block, the objectives are: (i) In every block, from the very beginning, the block and village organisations would be basic units for formulating and carrying out different programmes. (ii) The Village Panchayat, the Village Co-operative and the Village School as also a statutory body at the block or district level are the foundations for the block development programmes. Full responsibility for planning and implementing the programme should be transferred to them. These institutions should be established in the course of two or three years and should begin to function well before the end of the first stage. (iii) The programmes and activities of agencies included in the schematic budget as well as of departmental agencies which may not form part of the schematic budget, should be fully integrated into the block development plan. (iv) As far as possible, those provisions should be included in the schematic budget which are intended to attract local community participation in labour, money and other ways.[7]

The Training Programme

To implement a programme of this magnitude, great importance should be attached to the training of workers — official and non-official. The training programme has witnessed an all round improvement during the Second Five-Year Plan period. Training

7 Community Development in India, *op. cit.*, Appendix, III, pp. 153-154.

facilities have been both expanded and improved. Consequent on full coverage of the rural areas by the C. D. programmes, the intake of fresh personnel into the extension network has begun to taper off to the maintenance level. As on 1st September, 1967, there were 1,07,305 technical personnel in various categories in the C. D. blocks.[8] Latterly, the programme emphasis has been shifting towards intensive development in selected areas. Correspondingly, the need for diversification and flexibility in the training programmes has become greater and the association of State Governments with training at all levels has become even closer.

ACHIEVEMENTS AND RESULTS

Coverage

The programme was initiated in October, 1952. By the end of 1955-56, out of 1,160 blocks allotted, 988 blocks covering 1,40,000 villages and a population of 77.5 million had started working. As part of the programme approved for the First Plan, 172 additional blocks comprising 17,200 villages and a population of 11.3 million were taken up in April, 1956. Thus, one out of every three villages in India was covered by the programme.

It was decided that during the Second Five-Year Plan the entire country should be covered with N.E.S. To fulfil this target, 3,800 N.E.S. Blocks were to be started during this period and 1,120 out of them were to be converted into C. D. Blocks, In view of the amount allocated in the Second Plan for the programme, the estimated ceiling of expenditure for a three-year period was later reduced from Rs. 15 lakhs to Rs. 12 lakhs on a C. D. Block and from Rs. 4.5 lakhs to Rs. 4 lakhs on a N.E.S. Block. The Government of India agreed to continue to meet fifty per cent of the recurring expenditure on personnel to be retained on the N.E.S. staffing pattern in blocks which will have completed their scheduled period of operation. In order to assist the keeping up of the tempo of work in the Projects/Blocks which revert to the post-intensive phase, an expenditure of Rs. 30,000 per annum per block was provided for a period of three years for programmes relating to local works and social education.

8 Report 1967-68, Ministry of Food, Agriculture, Community Development and Co-operation (Department of Community Development), Government of India, New Delhi (1968), p. 25.

By the end of the Second Plan, 3,137 blocks had been started covering 374 thousand villages and about 203 million of the population (excluding towns with a population of one lakh and more) or 66 per cent and 61 per cent of the villages and population respectively as against 29 per cent and 27 per cent respectively at the beginning of the Second Plan. In order to cover the entire rural area with development blocks, the country has been delimited into 5,223 blocks. Another 2,051 blocks were allotted during the Third Plan period, making a total of 5,188. The remaining 35 were to be allotted by October, 1963. By the end of the Third Plan, Community Development blocks have been established throughout the country and every village has been brought under their fold. As on 1st January, 1968, there were 1,717$\frac{1}{2}$ blocks in Stage I, 2,207$\frac{1}{3}$ in Stage II and 1,336$\frac{1}{2}$ in post-Stage II, while four blocks were in the pre-extension phase, bringing the total number of blocks to 5,265$\frac{1}{3}$ covering 566.9 thousand villages and a population of about 404.6 million. In addition to this, 31 Tribal Development blocks were set up in the different States during 1966-67 as against 415 blocks set up in the Third Plan period and 43 Special Multipurpose Tribal blocks started under the Second Plan.[9]

An outlay of Rs. 96.5 crores was provided in the First Plan. Government expenditure came to Rs. 46.2 crores during this period or about 48 per cent of the outlay. During the Second Five-Year Plan an outlay of Rs. 201.3 crores was provided and Government expenditure came to about Rs. 189 crores.[10] During the Third Plan, the total allocation of funds in the Community Development sector was Rs. 267.5 crores, as against an approved Plan outlay of Rs. 287.7 crores. The actual expenditure in the Third Plan period has been estimated at Rs. 270.7 crores, the expenditure in four States having exceeded the Plan outlay. The Draft Outline of the Fourth Five-Year Plan has provided an outlay of Rs. 260 crores on the C.D. programme.

Physical Achievements

As regards physical achievements, statistical data do not throw much significant light on certain crucial aspects of rural

9 *ibid.*, p. 3.

10 *Kurukshetra*, October, 1962, p. 101.

economy and life. For instance, in the field of agriculture, only absolute figures of quantities of seeds, fertilizers, pesticides, etc., distributed are given. These do not yield any meaningful conclusions. Thus an increase in the quantity of seeds distributed would give no precise measure regarding the change in the area brought under improved seeds unless we know about the quantity of improved seeds used by farmers from their own stocks, the quantity obtained from other sources, such as local traders, other cultivators and registered growers and the quantity used for consumption purposes.[11] Similarly, for proper evaluation of the efforts of extension, we should know about the area manured, intensity of manuring, crops manured, area benefited from improved methods of cultivation. Either the data supplied in regard to these aspects are limited and unreliable or in some case no data are available.

According to the Seventh Evaluation Report,[12] based on reports from 18 blocks, improved agricultural practices were spreading very slowly. Shortage of supplies, of seeds and fertilizers and delay in their availability were pointed out to be some of the impediments. The extension methods left much to be desired in their effectiveness. Demonstration continued to be the main technique and individual contacts were generally not being made. The achievements in other fields were none too gratifying.

The Programme Evaluation Organisation has brought out reports on some vital rural programmes during the last seven years, *e.g.*, the multiplication and distribution programme for improved seeds, problems of minor irrigation, the soil conservation programme, case studies of pilot projects for the utilisation of rural manpower and use of fertilizers and manures in agricultural production. These reports show that the initial bottlenecks and weaknesses, *e.g.*, lack of co-ordination between different departments, deficiencies in the technical guidance, weaknesses in the extension methods and the distribution system still persist in varying degrees and the impact is uneven.

11 A more detailed discussion of the subject will be found in the Study of the Multiplication and Distribution Programme for Improved Seed (1961), Programme Evaluation Organisation, Planning Commission, Government of India (1962).

12 Programme Evaluation Organisation: Seventh Evaluation Report on the Working of Community Projects and N. E. S. Blocks (1960), p. 92.

CO-ORDINATION OF DEVELOPMENTAL ADMINISTRATION

The problem of co-ordination of developmental administration at the district, block and village levels has assumed great significance with the acceptance of the Welfare State as the goal and especially in the community development programme. There are two problems at each administrative level. Firstly, the work of different technical departments has to be knit together to make it a single co-ordinated programme and, secondly, there is the problem of guidance and supervision.

It has been observed that the dual control of specialists concerned with different subjects at the block level by the Block Development Officer and by technical officers at the district level has not been working satisfactorily.[13] There is a distinct feeling among the technical officers that the introduction of Block Development Officers is removing them from their contact with the ground staff and that the technical departments are not consulted in the working of the projects. It has also happened that the departmental officers have concentrated their attention in non-block areas where they had more direct control on their specialist staff.

Another problem is to bring about close liaison and co-ordination between the official and the non-official agencies of development. Among the various types of agencies engaged in the task of rural development are the village panchayat, village co-operative and the village school. They form the basis of all activities in the village. But the main weakness of the present set-up of administration is that these institutions are not inter-linked. By linking up the village panchayat closely with development programmes, village leadership can be successfully developed and co-operative activity can also be strengthened. The ultimate guarantee of the permanence of the C.D. movement depends largely on how well these village and intermediate local bodies are established and developed into efficient people's organisations for carrying out their own programmes of welfare.

13 P.E.O.: The (Third) Evaluation Report on the Working of Community Projects and N. E. S. Blocks (1956), pp. 20-22.

AN ASSESSMENT

The movement has been in existence for over fifteen years and its progress from year to year has been indicated in the annual evaluation reports published by the Planning Commission. A study of these reports brings out several interesting points. Within a year of its inception, the Community Development programme had given rise to considerable optimism among those who had watched its progress. For instance, the First Evaluation Report Stated: "Old habits of thoughts and action are being discarded with an unexpected ease. It appears that very soon it is going to be more difficult to check the speed of expansion so that it may not outrun the resources of organisation, than to secure full response to such aids to progress as can be put into the field."[14] Subsequent evaluation reports, however, tend to take a more cautious attitude and the Fourth Report, published in 1957, was critical of several aspects of the movement.

While there has been some progress as regards the use of improved seeds, fertilizers, and improved methods, especially the Japanese method of cultivation, land improvement, minor irrigation, construction and renovation of wells for drinking water, in other aspects of agricultural development like green manuring, conservation of farmyard manure through use of compost pits, land reclamation, soil conservation, consolidation of holdings, etc., there is much less activity. In the propagation of improved techniques, improved seeds and fertilizers, limitations to progress have come more and more from weaknesses in research and extension methods than from the lack of willingness of the farmer to adopt the improvement suggested. As programmes relating to agricultural production continue to receive high priority, the amenities programme remains restricted.

One of the neglected aspects, both at the research and extension stages, has been the economics of improved farming and this has told seriously on the progress of farming. The discoveries and practices recommended for adoption are not generally tested for their economic implications. At the extension stage this aspect has been generally neglected. The batch of specialists provided

14 P.E.O.: Evaluation Report on the First Year's Working of Community Projects, *op. cit.*, p. 46.

at various levels, block, district, State and Centre is conspicuous by the absence of agricultural economists, though a statistical progress assistant is considered necessary. Extension workers are, therefore, not able to bring home to the cultivators effectively the economics of sponsored methods and practices.

Besides, the provision of proper facilities for credit has not progressed sufficiently. The availability of co-operative credit has been confined in most areas to the middle and bigger land holders. Even in areas where the co-operative movement is fairly widespread, not more than 30 to 40 per cent of the rural population has been considered creditworthy.[15] Thus a large proportion of 'non-creditworthy' people remained untouched by the movement.

In terms of creating increased opportunity for employment in the non-agricultural sector, the programme has had only a limited success. New rural industries have benefited not more than 25 out of every 1,000 families in the project areas. Its success has been mainly in the field of providing technical guidance and material resources to the artisans. These are undoubtedly valuable services which need to be rendered to the rural areas. Further to secure more benefit out of the programme for the under-privileged sections of the rural society, the programme should be re-oriented considerably in favour of non-agricultural or rather non-land holding classes, particularly the *Harijans*.

The programme for women and children has been one of the weakest links in the development work. The reasons for this state of affairs are acute shortage of suitable women workers, absence of proper training facilities, defective psychological approach and non-availability of funds when required. In the work of women welfare, the area of operation of the trained personnel as well as the scope of the present activities should be limited so as to make the service more intensive and effective. This should be the general policy to be followed when there is not enough trained personnel. A satisfactory programme for child welfare limited to a few lines only should be evolved for a few

15 Community Projects Administration: Summary Record of Third Development Commissioners' Conference on Community Projects at Ootacamund (27-31 May, 1954), Planning Commission, Government of India (1955), P. 111.

selected areas in the first instance. Special programmes like those of applied nutrition, rural manpower and improvement of drinking water facilities in the villages need to be further intensified.

One of the lessons that emerges from the impact of the programme is that the people have played a part in overcoming several prejudices which are usually associated with village communities. They have not shown lack of enthusiasm for new ideas and programmes or improved methods when rightly approached. Experience has shown that people's response is more a matter of correct official approach to them than any lack of appreciation of the programme on their part. The achievements recorded under various heads could not have been possible but for the active participation of the people in the programme. On the whole, the major contribution of the community development movement has been in stimulating an integrated total approach to rural development based on local initiative and community action and working through representative institutions of the people.

Although the community development programmes have succeeded in building up new social and extension services, it is, however, equally necessary to maintain these services when the official project comes to a conclusion. During the continuance of the project it may not be necessary to insist that the community should pay for all the social services. But it is desirable that local self-governing institutions and people's representative bodies should be built up and strengthened so as to take over responsibility for running the services and their proper management and maintenance. Their role would be to lead people continuously to a higher standard of life in various directions.

PANCHAYATI RAJ

The association of the people at all the stages of development — planning, administration and execution — constitutes the crux of the Community Development programme. This, however, has been one of the weakest aspects of the programme. The Programme Evaluation Organisation had drawn attention to this shortcoming in some of its evaluation reports and suggested the

democratisation of the block level bodies. The Mehta Team which was appointed to study and report on the Community Projects and N.E.S. observed that "admittedly, one of the least successful aspects of the C. D. and N.E.S. work is its attempt to evoke popular initiative."[16] They, therefore, recommended democratic decentralisation, later known as *Panchayati Raj*. The system they advocated envisaged the creation of democratic institutions possessing adequate powers and finance in three tiers at the local level.

Before we deal with the recommendations of the Team on this subject and the progress made in implementing them, we may briefly review the history of local self-government in this country.

PANCHAYATS

The *Panchayat* is an ancient institution in India. This institution enabled India to survive the various cataclysms of her political history and preserved the continuity of her cultural development. This body administered the affairs of the village on its own responsibility or as advisory council to the village headman. It administered justice, maintained local order by watch and ward, provided for education, sanitation, public works such as construction and maintenance of buildings, roads, tanks and wells, and all other common amenities, economic and social, of village life, and collected and distributed alms to the poor. For its finances, it relied mostly on the produce from the village common lands. Thus, it was self-sufficient and self-supporting. Whatever the form of Government at the Centre, the village remained an autonomous unit mainly self-governing. The early British administrators have paid ample tribute to these little republics; but the advent of the British rule with its centralised administrative system created conditions for their decay and disappearance.

Decentralisation Commission, 1909

The Royal Commission on Decentralisation, 1909, pertinently remarked: "The scant success of the efforts hitherto made to

16 Committee on Plan Projects: Report of the Team for the Study of Community Projects and National Extension Service, Planning Commission, Government of India (1957), Volume I, p. 3.

introduce a system of rural self-government is largely due to the fact that we have not built from the bottom. The foundation of any stable edifice which shall associate the people with administration must be the village, one in which the people are known to one another and have interests which converge on well-organised objects." The Commission recommended that "an attempt should be made to constitute and develop village panchayats for the administration of local affairs" even though "the system can be gradually and tentatively applied" to "make the village a starting point of public life." The Government of India published, in 1915, a resolution and issued to all Provinces, "despite the apathetic reports from most of them," "definite instructions to give full trial to a practical scheme of village panchayats, wherever it could be worked out in co-operation with the people." The Montagu-Chelmsford Report recommended "complete popular control in local bodies" and added that "responsible institutions will not be stably-rooted until they are broad-based." The Act of 1919 which transferred the portfolio of local self-government to ministers was followed by measures in several Provinces to implement this policy.

VILLAGE PANCHAYAT LEGISLATION

The legislative Acts passed initially in the different Provinces aimed at the creation of local self-governing bodies in villages. The Indian States also were not inactive.

Village Panchayats After Independence

The development of Village Panchayats received a great fillip after the attainment of Independence and the adoption of a republican form of constitution in the country. The Directive Principles of State Policy (Article 40) lay down that the State shall take steps to organise village panchayats and endow them with such powers and authority as may be necessary to enable them to function as units of self-government. Apart from this Directive, the phenomenal increase in the developmental activities of the State under planning has also brought out the need for an institution like the village panchayat as the unit of decentralised administration. Therefore, great emphasis has been laid in the Five-Year Plans on the constitution of village panchayats as an indispensable part of the administration in rural areas, "as representing the best

interests of all sections of the community," and having a "unique status."[17]

In line with this policy, almost all the States took steps to improve the existing legislation, wherever necessary, with a view to promoting quicker development of panchayats as well as entrusting them with greater responsibilities. In almost all the States, the necessary legal framework for the establishment of village panchayats had been provided; and most of the States pushed forward vigorously the organisation of these local institutions during the First Plan period.

The number of village panchayats went up from 83,093 in 1950-51, the pre-planning year, to 1,23,670 at the end of March, 1956,[18] *i.e.*, by about fifty per cent. There was good progress in the establishment of village panchayats in Uttar Pradesh, Punjab, Rajasthan, Kerala, Himachal Pradesh, and the erstwhile States of Madhya Bharat and Saurashtra, where there were panchayats for almost all the villages. The pace was somewhat slow in Assam, West Bengal, Orissa, Mysore and Andhra. The progress since the end of the First Five-Year Plan is reviewed later.

The administration of the panchayats, however, was not very satisfactory. According to the finding of the Mehta Team, possibly not more than ten per cent of the total number of panchayats were functioning effectively; roughly one-half were of an average standard and the remaining forty per cent were working unsatisfactorily.

PROBLEMS OF REORGANISATION

On a review of the position of the panchayats at the end of the First Five-Year Plan, one general defect noticed was that while a number of them had good leadership, many were handicapped for want of sufficient experience of development activities. Some of the factors that have come in the way of greater panchayat participation in rural development are lack of financial resources, existence of factions in villages, the failure of the people to attach due importance to panchayat elections, illiteracy, etc.

17 See The First Five-Year Plan, *op. cit.*, pp. 132-143.

18 Committee on Plan Projects: Report of the Team for the Study of Community Projects and National Extension Service, Vol. II (1957), p. 1.

The main problem in the reconstitution of village panchayats is the creation of viable units which would require the readjustment of the existing village boundaries. While it is necessary that the units are small enough to have a sense of solidarity, the villages should not be so small that they cannot be provided with essential services for their benefit. One way out is that where individual villages are not large enough to serve as units for panchayats, a single panchayat may serve a population of 1,000 to 1,500. Another suggestion is that the village panchayat and the village co-operative should serve identical areas and should establish close contacts with adjoining units.

The second problem is that of the functions of the panchayats. The First Plan had recommended village production programmes and the development of village lands and resources as their main functions. In the Second Plan the functions are classified as administrative and judicial. In the administrative sphere, the functions should be (1) civic, (2) development, (3) land management and (4) land reforms. The civic functions are already embodied in the legislation of almost all the States. The National Development Council accepted the blocks and village organisations as basic units for formulating and carrying out development programmes. It has been proposed that panchayats should plan and execute 'local works,' including supply of drinking water, drainage and sanitation, communication, education, etc., in community development areas.

The third problem is that of finance. The practice of permitting local bodies to levy all taxes which the State Government can levy, and then exploiting these taxes for State purposes takes away the initiative from local bodies. It is necessary to revive the old practice of leaving certain well-marked fields of taxation for the exclusive or primary use of local bodies. It is suggested that a proportion of the land revenue in each village, assigned to the panchayat for local development should serve as a nucleus fund. The allocation to the village panchayats by the States may be in two parts, a basic proportion of 15 to 20 per cent of the land revenue and an additional grant extending up to 15 per cent of the land revenue on the condition that the panchayat raises an equal amount of taxation or voluntary contribution.

Lastly, efforts should be made to eliminate the influence of village factions which seriously hinder the healthy development of panchayats. Unanimous elections may help in this respect. Experienced administrators in rural areas consider that most of the evils in the present day village life are the outcome of a long period of enforced unemployment in agriculture. If the levels of employment and production rise and villagers are organised co-operatively for an attack on poverty and for raising their standard of living appreciably, the root causes of village factions can be removed.

DEMOCRATIC DECENTRALISATION

The Second Plan has emphasized the need for creating a well-organised democratic structure of administration within the district in which the village panchayats would be organically linked with popular organisations at a higher level. In such a structure, the functions of the popular body should include the entire general administration and development of the area, other than such functions as law and order, administration of justice and certain functions relating to the revenue administration. With a view to examining, among other things, the adequacy of the existing local bodies to take over and perform these functions, the Committee on Plan Projects of the Planning Commission appointed in January, 1957, a Study Team under the leadership of Shri Balvantrai Mehta. The Team which submitted its report[19] in November, 1957, stressed the need for decentralisation of responsibility and power within the district above the village level.

The Team has recommended a three-tier scheme, *i.e.*, the establishment of village panchayat, *Panchayat Samiti* and *Zila Parishad,* which should be started at the same time and operated simultaneously in the whole district. The *Panchayat Samiti* was to be constituted by indirect election from the Village Panchayats with adequate financial resources and a life of five years. Its functions should cover almost the entire development work of rural areas and, as such, the Team recommended various resources for being assigned to it. The important resources, among others, are (i) a percentage of land revenue collected within the

19 Report of the Team for the Study of Community Projects and National Extension Service, Vols. I, II & III (1957).

block, which should not be less than 40 per cent of the State's net land revenue, (ii) cess on land revenue, (iii) tax on professions, (iv) rent and profit accruing from property, (v) voluntary public contribution and (vi) Government grants. All Central and State funds spent in a block area should invariably be assigned to the *Panchayat Samiti* to be spent by it directly or indirectly. To ensure the necessary co-ordination between the *Panchayat Samitis*, a *Zila Parishad* should be established consisting of the Presidents of *Panchayat Samitis*, members of the State Legislature, Members of Parliament from the area and the district level officers. The Chairman of this *Parishad* would be the Collector. The *Parishad* would have the power to examine and approve the budgets of the *Panchayat Samitis.* It would also generally supervise the activities of the *Panchayat Samiti*, but it would not be invested with any executive functions.

The panchayat should be constituted purely by election with the provision to co-opt two women members and one member each from the scheduled castes and scheduled tribes. A close link should be established between the *Gram Sevak* (village level worker) and the village panchayat by making him the Development Secretary of the *Gram Panchayat.* As far as possible, the village panchayat should be used as an agency for the collection of land revenue and should be paid a commission. The panchayat should be entitled to receive from the *Panchayat Samiti* a share up to three-fourth of the net land revenue assigned to the latter. The panchayat will be guided by the *Samiti* in all its activities. The obligatory functions of the village panchayats should include, among others, provision of water supply, sanitation, lighting, land management and welfare of backward classes.

How far these proposals can be successfully implemented in practice is a moot point. The Team itself was conscious of this fact and therefore, suggested a "phasing of the process of the creation of the *Panchayat Samitis*."[20] While the Central Government has approved of the general principle of giving responsibility for development to representatives of people within the district, the precise manner in which the principle should be applied was remitted for consideration by the States.

20 Committee on Plan Projects: *op. cit.*, Vol. I, p. 21.

PROGRESS

Coverage by Panchayats

With the introduction of *Panchayati Raj* in many States and the prospect of its introduction in the others, village panchayats as the basic units of self-government have come to assume great importance. Rapid strides have been made in the organisation of panchayats. The progress in this respect is shown by the figures in the following table.[21]

COVERAGE BY PANCHAYATS

	As on 30-9-57	As on 31-3-61	As on 31-3-67
1. Number of Panchayats	1,60,369	1,93,527	2,12,465
2. Number of villages covered (thousand)	410	502	557.2
3. Rural population covered (lakh)	19,73	27,01	35,23
4. Percentage of villages covered	75	89	99.0
5. Percentage of rural population covered	74	91	98.0
6. Average number of villages per Panchayat	2.5	2.6	2.6
7. Average population per Panchayat	1,299	1,396	1,658

On March 31, 1967 there were 2,12,465 village panchayats in the country covering 557 thousand villages and a population of 352.3 million. Between 1957 and 1967, the number of panchayats has risen by over 32 per cent and practically the entire country (98 per cent) is now covered by panchayats as against 74 per cent in 1957.

Eleven of the sixteen States have already been fully covered by panchayats. In three others, Bihar, Maharashtra and West Bengal, the coverage is almost complete. Out of the remaining two also the coverage is 94 to 96 per cent in Madhya Pradesh and Orissa. Among the Union Territories, Delhi, Himachal Pradesh and Goa, Daman and Diu are fully covered; in Manipur, Tripura and Andaman and Nicobar Islands the coverage is 63 per cent, 81 per cent and 95 per cent respectively.

21 *Kurukshetra*, October, 1962 and 1963 and Report 1967-68, Ministry of Food, Agriculture, Community Development and Co-operation (Department of Community Development), Government of India (1968), pp. 29-30.

Several measures have been taken in the recent past to revitalise the village panchayats and to enable them to accept responsibility for undertaking village development programmes. The resources of the panchayats are being augmented and there has been an increasing stress on their undertaking remunerative schemes of community benefit. They are also being gradually entrusted with the task of preparing village production programmes in collaboration with the co-operatives. There has been a concerted drive to impart training to the *Panches, Sarpanches* and Secretaries.

The jurisdiction of the panchayats in terms of the average number of villages and rural population per panchayat continues to vary widely from State to State. The number of villages is as high as 20 in Orissa and 16 in Himachal Pradesh. It varies between 6 and 7 in Bihar, Assam and Jammu & Kashmir; it is over 3 in Mysore, Madhya Pradesh, Rajasthan, Tripura and Andaman and Nicobar Islands; and is less than two in the remaining States (West Bengal, Andhra Pradesh, Kerala, Maharashtra, Punjab and Haryana, Gujarat, Uttar Pradesh, Goa, Daman and Diu and Delhi). In terms of population, Kerala tops the list with over 15,000 people per panchayat followed by Orissa (6,720) and Bihar (3,902) which are all still on the high side. Uttar Pradesh has the smallest population of about 889 per panchayat. For the country, as a whole, the average number of villages per panchayat is 2.6 and the average population is about 1,658.

The members of the panchayat (*Panches*) are elected through secret ballot in most States. Election by show of hands is prevalent in Assam, Jammu & Kashmir, parts of Madhya Pradesh, Uttar Pradesh and Himachal Pradesh. The *Sarpanch* and the *Up-Sarpanch* are generally chosen by the *Panches* from among themselves. Direct election of *Sarpanches* by the *Gaon Sabha* is prescribed only in Assam, Bihar, Punjab, parts of Kerala, Rajasthan, Uttar Pradesh and Himachal Pradesh.

The number of members in the panchayat varies from 4 to 31, but in the majority of States the range is 5 to 15. There is a special reservation of seats for scheduled castes and tribes in most States. Reservation for women also exists in several States,

e.g., Andhra Pradesh, Assam, Gujarat, Madras, Maharashtra, Mysore, Punjab and Himachal Pradesh.

Sources of Income

In most States, the panchayats are entitled either to a share of land revenue directly or to a cess on land revenue, the exceptions being Jammu & Kashmir, Madhya Pradesh and West Bengal in which the panchayats do not have either of these sources of income. In Andhra Pradesh 25 *Paise* and in Rajasthan 20 *Paise* per head of population are being given as share of land revenue to the panchayats. Many States which did not hitherto provide for a share of land revenue to the panchayats have done so in their new Acts. The share of land revenue varies from $6\frac{1}{4}$ per cent in Uttar Pradesh to 35 per cent in Mysore while the share of cess varies from 25 to 100 per cent. Gujarat and Maharashtra happen to be the most liberal in assigning a substantial part (25 to 30 per cent) of land revenue and the entire land cess to the panchayats. The Kerala Panchayat Act, 1960, provides for transferring the entire basic tax to panchayats. In view of the proposal to abolish land revenue in a majority of the States, the panchayats would be deprived of this source of income for undertaking local development programmes.

Panchayats are also vested with the power of levying a number of compulsory and optional taxes. House-tax, profession tax, tax on property and on vehicles are the most commonly levied compulsory taxes. Other sources of income include, apart from Government grants, taxes levied on a number of optional items, and fees realised from regulatory and remunerative enterprises such as cattle pounds, markets, slaughter houses, etc. Government waste lands, pisciculture, etc., are other potential sources of income to the village panchayats and have already been transferred to them in many States.

HIGHER BODIES

Progress

Progress in enacting legislation for establishing higher bodies and in taking steps to implement them has been fairly rapid. *Panchayati Raj* legislation has been enacted in all the States, except Kerala and Jammu & Kashmir. In Kerala, the bill for

introducing *Panchayati Raj* has been referred to a Select Committee of the State legislature. In Jammu & Kashmir, the recommendations made by the Democratic Decentralisation Committee, set up by the State Government to suggest a suitable pattern of *Panchayati Raj*, are under consideration of the State Government. The same is the position in Himachal Pradesh. Steps to enact the legislation were generally taken promptly. Necessary enactments were passed in half a dozen States (excluding Madras where the existing legislation was adopted with some modification) within a year of the endorsement of Mehta Team's recommendations by the National Development Council in November, 1958.

In regard to the number of tiers and their location also, eventually all the States fell in line with the Mehta Team's recommendations for setting up two-tiers above the village and almost all in also locating them at the Block and District levels. With the exception of Madhya Pradesh, Kerala, Jammu & Kashmir and Nagaland, the three-tier system of *Panchayati Raj* institutions has been set up in all the States, though the coverage in Bihar presently extends only to the three districts of Ranchi, Bhagalpur and Dhanbad. In the Union Territory of Delhi, legislation has been introduced for the establishment of statutory *Panchayat Samitis* by conversion of the existing Block *Samitis;* as for *Zila Parishad*, it has been proposed to set up a Rural Area Advisory Committee of the Delhi Metropolitan Council presided over by the Executive Councillor in charge of rural development.

Panchayat Samitis

On 31st March, 1967, there were 3,494 *Panchayat Samitis* in the country. The Mehta Team had recommended indirect election as the method for constituting *Panchayat Samitis.* The pioneer States of Rajasthan and Andhra Pradesh did not accept this recommendation in full and preferred to have ex-officio membership. Among the States which promulgated the legislations later, Assam also chose indirect election. Madras stuck to the provision of indirect election in the legislation already existing. Some States preferred to have indirect election along with other modes. In Maharashtra, as in Uttar Pradesh, where all

local members of *Zila Parishad* are ex-officio members of the *Panchayat Samiti*, there is some provision for indirect election also. Similarly, in Orissa also, while all *Sarpanches* are ex-officio members, one member is also to be elected by each panchayat. In some States, *viz.*, Madhya Pradesh, Mysore and Punjab, there is provision for direct election.

The *Panchayat Samitis* have been entrusted with development functions and made responsible for the implementation of the community developent programme. The *Samitis* have been vested with specific executive responsibilities in fields like primary education, health and sanitation and communications. They also exercise supervision over the panchayats and have the right to scrutinise the budgets of the panchayats and offer suggestions. The *Samitis* function through Standing Committees which have been set up for specified aspects of its work, like production programmes, social welfare, weaker sections of the community, finances, etc.

The finances of the *Panchayat Samitis* consist generally of funds drawn from the Block budget, and those transferred to them by the State Government, share from the land revenue and Government grants. The *Panchayat Samitis* in some States have also been empowered to levy certain taxes. In Gujarat, the *Samiti* can, subject to certain limits, levy all the taxes which a *Gram Panchayat* is empowered to levy and can also enhance stamp duty by 15 per cent.

In Maharashtra, the middle tier — the *Panchayat Samiti* — is not a strong institution. In this State the *Panchayat Samiti* has been empowered to prepare "an overall plan for works and development schemes to be undertaken in the Block for enabling the *Zila Parishad* to prepare its development plans." Besides, the *Samiti* may also perform such of the functions of the *Zila Parishad* within the block as may be delegated to it. The *Samiti* in Maharashtra is dependent essentially on grants from the State Government received through the *Zila Parishad*. The *Panchayat Samiti* in contrast to the *Zila Parishad* is, statutorily, not even a body corporate, and no provisions regarding perpetual succession, common seal, right to sue and to be sued against in relation to the *Samiti* have been made in the statute.

Zila Parishad

About 253 *Zila Parishads* have been set up in the country by the end of March, 1967. Members of Parliament, M.L.As and M.L.Cs are members with the right to vote and hold office in the *Zila Parishads* in Andhra Pradesh, Assam, Rajasthan, Bihar, Madras, Madhya Pradesh, Uttar Pradesh and West Bengal. They do not have the right to vote in Gujarat, Orissa and Punjab. The District Collector is a member of the *Zila Parishad* in Andhra Pradesh, Gujarat, Madras, Mysore, Orissa, Punjab and Rajasthan. He is the ex-officio Chairman of *Zila Parishad* in Madras and Mysore and of all the Standing Committees in Andhra Pradesh.

The functions and powers of *Zila Parishad* vary naturally from State to State. In most States the *Zila Parishad* is a co-ordinating body which exercises general supervision over the working of the *Panchayat Samitis* and advises the Government on the implementation of the development schemes. In Andhra Pradesh the *Zila Parishad* has specific executive functions in respect of secondary education — vocational and industrial schools, and also discharges the functions of the *Panchayat Samitis* in respect of non-*Samiti* blocks. In Maharashtra, the *Zila Parishad* is the strongest of the *Panchayati Raj* bodies and is vested with executive functions in various fields, including planning and development and advising the State Government. In Gujarat and Uttar Pradesh also, the *Zila Parishad* is vested with administrative functions in various fields. The *Zila Parishads* exercise powers of supervision and guidance over the *Samitis* in most States and in some are empowered to supervise the working of the panchayat as well.

The finances of the *Zila Parishad* mostly consist of the funds received from the State Government in the form of grants, etc., and also the share of the land cess and other local cesses and taxes that are assigned to them. Besides, funds earmarked for specific schemes which are entrusted as agency functions to the *Panchayati Raj* bodies are also available. In some States, the *Parishads* are empowered to levy certain taxes, or to enhance, subject to certain limits, the taxes already being levied by the panchayat and the *Panchayat Samitis.*

The *Zila Parishads* in all the States are empowered to constitute Standing Committees and function through them. The staff, particularly of the Development Departments, at the district level is made responsible to the *Zila Parishad* for assisting the *Parishad* in the planning and implementation of development programmes and also to provide technical supervision and guidance to the *Samiti* and panchayats, which may undertake specified developmental programmes.

Review of Working of Panchayati Raj[22]

In view of the accepted policy of developing the *Panchayati Raj* institutions as the prime agencies for rural development, increasing attention is being paid by both the Central and State Governments to the appraisal of the working of these institutions with a view to identifying the emerging problems and to take suitable measures to improve the functioning of the *Panchayati Raj* system. Centrally sponsored Study Teams have already examined different aspects of the *Panchayati Raj* system, such as mode of elections, finances, audit, incentives and safeguards; continued follow-up of action on the Teams' recommendations is being maintained by the State Governments. A Study Team set up by the Government of undivided Punjab to review the existing position and suggest measures for improvement has recommended increased devolution of resources and functions to the *Zila Parishads* on the pattern prevailing in Maharashtra, proper exploitation and utilisation of the sources of revenue of the *Gram Panchayats*, appointment of a senior co-ordinating officer at the State level and deputation of senior administrative officers to work as Chief Executive Officers of *Zila Parishads*. The Government of Uttar Pradesh has decided, in pursuance of the recommendations of another Study Team, to entrust agricultural production as a specific function to the *Zila Parishads* and to depute senior officials to work as the Chief Executive Officers. Some States have amended their legislation in the light of experience to strengthen the working of the *Panchayati Raj* system. In West Bengal, the legislation was amended to empower *Zila Parishads* to levy a licence fee on fairs. In Madras, the amended

22 Report 1966-67, Department of Community Development, Government of India, *op. cit.*, pp. 3-5 and 8-9.

law provides for levy of house-tax by panchayats on an annual basis. Maximum devolution of suitable departmental programmes, along with commensurate resources, to the *Panchayati Raj* bodies at the appropriate levels is vital, if, as envisaged, they are to be the key instruments for rural development. While this has to be a continuous process, it is note-worthy that already in five States, the order of funds routed through the *Panchayat Samitis* annually ranges from Rs. 4 lakhs to Rs. 9 lakhs per block.

CONCLUSION

In the context of the emphasis on agricultural and related programmes of development, the need has been felt to have a co-ordinating agency at the Centre, not only to ensure that the *Panchayati Raj* institutions and Community Development organisation play their respective roles in the intensive effort of agricultural production, but also to implement the other aspects of the Community Development programme as lie outside the field of agriculture. With a view to secure co-ordination among the different Departments at the Centre concerned with agricultural development, early in 1966 the Ministry of Community Development and Co-operation ceased to exist and the Department of Community Development along with the Department of Co-operation has become a part of the Ministry of Food, Agriculture, Community Development and Co-operation. The Department of Community Development maintains a distinct identity. In order to further secure a unified approach in the working of the two Departments of Community Development and Agriculture, it is proposed, as a first step, to bring their training programmes together under common direction. Several measures have also been taken at other levels also for securing more purposeful co-ordination for intensifying the agricultural programmes. In Assam, Kerala, Punjab, Rajasthan and Uttar Pradesh, and, partly in Maharashtra and West Bengal, an integrated Department of Agricultural Production has been set up at the State headquarters under a senior official; other States have been urged to do likewise. In the majority of States, Agricultural Production Committees of the *Panchayati Raj* institutions have been set up at the district, block and village levels and the district heads of Departments are being associated with the appropriate Standing Committees of the *Zila Parishad*.

In the context of the objective of attaining self-sustaining economic growth and self-sufficiency in food, a re-definition of the future approaches of Community Development and *Panchayati Raj* has become necessary. The new lines of policy on community development were considered in detail by the Annual Conference of State Development Commissioners and the Conference of State Ministers of Community Development and *Panchayati Raj* held at New Delhi in August and October, 1966 respectively. Keeping in view the basic aim of Community Development, *viz.*, an integrated approach to rural development through community participation and local effort, both the Conferences stressed the need for a measure of flexibility in the organisational arrangements and for fresh emphasis on programme priorities. It has been suggested that a distinction has to be made between programmes of nation-wide priority and coverage like agriculture and family planning which have to be universally applicable and other programmes of local relevance like welfare and amenities programme which have to be taken up according to local needs and availability of resources. The primacy due to the role of *Panchayati Raj* institutions and the importance of necessary functional linkage between them and the extension services have also been re-emphasized. The new policy envisages a closer and more active involvement of the *Panchayati Raj* bodies in the process of economic development and social advance. Consequently, it has been urged that the full three-tier structure should be established in the States which are still without them. The need to further strengthen the district level institutions in particular has been stressed by assigning greater executive responsibilities where they may be functioning as advisory and co-ordinating agencies. The Conference of Chief Ministers and Ministers for Community Development, *Panchayati Raj* and Co-operation held at Madras in June, 1968 broadly endorsed the approach enunciated in the policy statement of the Union Ministry of Community Development and already circulated to State Governments. The Conference decided to strengthen the community development programme and the *Panchayati Raj* institutions.

Panchayati Raj is full of momentous possibilities for development by democratic methods. The Mehta Team drew

the attention of the Government of India to the need for the re-invigoration of local self-government. Devolution of power and resources, in adequate measure, is essential for development through democratic process. The Government of India accepted this policy and the State Governments have enacted necessary legislation translating this policy into action. The actual fulfilment of the aim with which these measures have been taken will depend on the soundness of the legislation, the sincerity of the officials in implementing them and above all, the capacity and will of the people to discharge the responsibilities enjoined upon them in a conscientious and public-spirited manner.

Steps have been taken to provide training, mainly of the non-institutional type, to certain important categories of non-officials, *e.g., Gram Sahayaks*, non-official members of Block Development Committees and *Panchayat Samitis*, Panchayat Secretaries and school teachers. Study camps, seminars and tours have been the other forms in which training has been provided to the officials and non-officials. A number of *Panchayati Raj* training centres have been opened. A Central Institute of *Panchayati Raj* has also been started to train principals and instructors of *Panchayati Raj* Training Centres. But, generally, these programmes have been conducted in a formal and hasty manner and the period of training is not long enough. Much greater attention needs to be given to this aspect. The village panchayats should function as institutions of local development and should be entrusted with all works of development within their jurisdiction. It is necessary that they should be assisted by efficient service agencies.

The *Panchayati Raj* system was introduced in order to bring people closer to planning and its implementation. It was hoped and expected that transfer of development functions to representative institutions at the local level would unleash the enthusiasm of the masses and give a spurt to development effort. Although enough time has not elapsed to pronounce a final judgment on the achievements of the *Panchayati Raj* institutions, it must be said that many of the hopes held about the experiment have not been fulfilled. On the contrary, there are signs that political rivalries have intensified; interference with routine administration has increased with consequent disharmony between popular

representatives and administrators; neglect of the weaker sections of the society and the hardships of the minority communities continue or get aggravated; public participation in development effort has not shown any appreciable increase. Certainly, the picture is not of unrelieved gloom everywhere—there are exceptions. The *Panchayati Raj* set-up is still to consolidate itself. Any administrative arrangement has its weaknesses and *Panchayati Raj* is no exception. The snags revealed in its working so far, centering principally on the human element, could be real; yet, at some point, they have to be met. The situation warrants a careful study of the new tendencies in rural areas and an effort to direct the energies of the rural masses along more desirable channels.

PART III

CHAPTER XI

AGRICULTURAL PRICES AND PRICE POLICY

A study of farm prices is important on several scores. Prices should not be so low that they constitute a disincentive to augment production through use of improved technology and the investment needed for the purpose. On the other hand, they should not be so high that they cause distress to consumers and push up costs in agriculture-based industries. Apart from the level of prices, their stability is also an important factor in the making of economic decisions in agriculture as well as in the rest of the economy. Farm prices tend to fluctuate more widely than those of other commodities mainly due to inelasticities of demand and supply. Wide price fluctuations give rise to uncertainty and inhibit investments in agriculture. Two major policies of the Government regarding the farm prices have been, therefore, to ensure to the farmers remunerative prices for their products and limit fluctuations. In this Chapter, we discuss the factual and the policy aspects of agricultural prices.

TRENDS IN AGRICULTURAL PRICES

An idea of the trend in prices of important agricultural commodities can be obtained from Table I which gives the index numbers of their wholesale prices in recent period. These indices are constructed on the basis of annual averages of their monthly prices with 1952-53 as the base year.

One major observation that follows from Table 1 is that prices of almost all important food articles — cereals, pulses, groundnut oil, sugar and *gur* — have fluctuated widely, declining during the first three years (1954-56) and rising steadily till 1963-64 and precipitously thereafter. The fact that prices of wheat and gram remained till 1963-64 at or below the 1952-53 level throughout the decade has been criticised as constituting a serious disincentive to the growth of their production. Though the liberal imports of P.L. 480 wheat were responsible to a considerable extent for the relatively low price of wheat, there is no

TABLE I

INDEX NUMBERS OF WHOLESALE PRICES OF IMPORTANT AGRICULTURAL COMMODITIES

(1952-53 = 100)

Year	Cereals					Pulses								
	Rice	Wheat	Jowar	Bajra	Cereals	Gram	Other pulses	Ground-nut oil	Sugar	*Gur*	All food articles	Cotton	Ground-nut	Jute
1953-54	100	93	100	103	98	89	93	120	99	141	100	104	127	98
1954-55	82	75	77	78	80	54	62	77	104	122	82	102	82	112
1955-56	78	72	67	84	76	49	69	74	94	88	95	97	79	117
1956-57	97	88	123	122	96	71	87	104	95	100	102	111	111	126
1957-58	105	88	114	126	101	68	91	105	110	107	103	106	108	133
1958-59	105	105	105	126	107	96	108	107	121	131	113	99	117	118
1959-60	105	96	119	126	104	75	104	118	124	161	116	106	131	125
1960-61	108	90	122	130	104	87	96	138	127	136	118	112	146	210
1961-62	105	91	112	132	102	83	97	144	125	116	118	109	155	178
1962-63	111	90	130	124	106	89	114	129	131	153	123	113	140	147
1963-64	125	99	116	132	116	100	124	131	139	218	141	119	144	148
1964-65	134	130	189	175	139	158	165	168	151	210	154	126	186	164
1965-66	141	138	197	191	148	151	162	213	153	162	175	129	223	219
1966-67	173	158	199	215	174	198	197	309	163	211	218	139	288	266
1967-68	206	202	227	250	211	258	—	—	184	458	226	159	242	211

Source: Office of the Economic Adviser to the Government of India.

conclusive evidence to establish that this, in fact, affected the growth of the wheat crop. Prices of rice and pulses other than gram increased but the increase was less relative to that of the food articles as a whole. Prices of inferior cereals like jowar and bajra experienced a more severe decline during 1954-56, but thereafter rose more steeply than the prices of rice and wheat. The rise in the prices of all cereals since 1963-64 has been very steep. The 1967-68 cereal index showed an increase of as much as 107 per cent over 1962. Prices of food articles other than foodgrains, *i.e.*, edible oil, sugar and *gur* recorded a much bigger increase. Much of the rise in the prices of 'food articles' group till 1963-64 can be attributed to these three articles and jowar and bajra.

Prices of commercial crops — cotton, groundnut, jute — increased along with those of foodgrains and evinced almost a similar pattern. They also declined during 1952-56 and started rising thereafter. On the whole, the increase in the prices of commercial crops — with the exception of cotton — has been greater than that of food articles during the entire period. Among the cash crops, jute prices showed the largest increase as well as variation. Cotton prices were subject to a ceiling — which was hardly effective — ; as such, their index does not represent the real situation. Groundnut prices, after a recovery from low levels attained in 1955-56, showed more or less a continuous and steep increase and outpaced the level of jute prices from 1964-65.

AGRICULTURAL AND NON-AGRICULTURAL PRICES

The trend in wholesale prices of different commodity groups for the period 1952-53 to 1967-68 may be observed now to assess the relative positions of agricultural and non-agricultural prices. The index numbers of wholesale prices of three commodity groups and for all commodities together are given in Table II.

It is evident from Table II that the price index of 'food articles,' 'manufactures' and the composite index of 'all commodities' have moved almost parallel till 1963-64. However, only in one year the index for food articles was lower by 13 points than that for manufactures. On the other hand, years 1958 to 1960 were more favourable to the former. The index for

TABLE II

INDEX NUMBERS OF WHOLESALE PRICES — BY GROUPS

(1952-53 = 100)

Year	Food articles	Industrial raw materials	Manufactures	All commodities
	Weights: 504	155	290	1000
1953-54	106.7	109.7	98.9	104.6
1954-55	94.6	101.9	100.6	97.4
1955-56	86.6	99.0	99.7	92.5
1956-57	102.3	116.0	106-3	105.3
1957-58	106.4	116.5	108.1	108.4
1958-59	115.2	115.6	108.4	112.9
1959-60	119.0	123.7	111.7	117.1
1960-61	120.0	145.4	123.9	124.9
1961-62	120.1	142.6	126.6	125.1
1962-63	126.1	136.5	128.8	127.9
1963-64	136.8	139.5	131.1	135.3
1964-65	159.9	162.7	137.3	152.7
1965-66	168.8	189.1	149.2	165.1
1966-67	199.9	228.7	163.0	191.3
1967-68	242.2	219.1	165.5	212.4

Source: Office of the Economic Adviser to the Government of India.

industrial raw materials, the bulk of which constitutes non-food crops, has been however consistently above the index for manufactures. Since 1963-64, the index for food articles as well as that of industrial raw materials have increased more steeply compared to the index for manufactures.

If we recombine the above four groups of commodities into two, (i) agricultural commodities and (ii) non-agricultural commodities, we get the results as shown in Table III.

TABLE III

INDEX NUMBERS OF WHOLESALE PRICES OF AGRICULTURAL AND NON-AGRICULTURAL COMMODITIES

(Base: 1952-53 = 100)

Year	Agricultural commodities		Non-agricultural commodities	All commodities
Weights	(680)	(461)	(320)	(1000)
1950	113		99	109
1951	122		117	120
1952	102		104	102
1953	107		99	104
1954	99		100	100
1955	88		99	92
1956	102		105	103
1957	109		108	109
1958	112		109	111
1959	118		111	116
1960	124		121	123
1961	126		127	126
1961-62		122.9	—	125.1
1962-63		123.3	—	127.9
1963-64		131.5	—	135.3
1964-65		155.8	—	152.7
1965-66		169.3	—	165.1
1966-67		199.0	—	191.3
1967-68		221.00		212.4

Sources: Economic Survey of Indian Agriculture 1960-61, Directorate of Economics and Statistics, Ministry of Food and Agriculture, Government of India (1961), p. 56; and *Reserve Bank of India Bulletin*, Vol. XXII, No. 5, May, 1968.

By and large, the movement in the prices of the agricultural and non-agricultural commodity groups have been on parallel lines. In the year 1955, however, the index for the agricultural commodities declined by as many as 12 points from the base year but that for the non-agricultural commodities fell by only 1 point. In the year 1961, the two indices stood almost at the same level. Since then prices of agricultural commodities have risen more rapidly than those of non-agricultural commodities.

FACTORS INFLUENCING PRICES

Rapid growth of population and rising income levels are two important factors that influence the demand for food. Food being the prime necessity of life, a rise in population leads directly to an increased demand for it. If the rise in per capita income is sluggish the pressure exerted on the demand for food would be less acute. But if money incomes also rise along with the population, as they did during the last decade, the pressure becomes more acute. This is due to high income elasticity of demand for food in India as well as the fact that a large proportion of total expenditure is devoted to food. The income elasticity of demand for food is believed to be nearer one in under-developed countries. The empirical results indicate this to be in the range of 0.6 to 0.7 for India. The proportion of total expenditure incurred on food is about 60 to 80 per cent in rural areas and about 50 to 60 per cent in urban areas. In under-developed countries, in the early stages of development, changes in the structure of demand from foodgrains to animal products or fruits and vegetables are not significant. But with rising income levels, a shift in demand from inferior grains like millets to superior ones like rice and wheat does take place. Even among the latter, preference is shown for superior varieties. This was discernible especially during the last decade when money incomes increased rapidly due to development expenditures under the Plans. Such a change in the demand structure exerts pressure on supplies since production of superior grains involves more effort and more material expenditure per unit of output. Both these factors—a general rise in the level of demand for food and changes in the structure of demand for it — therefore, lead to a rise in relative prices of food.

With the rise in the demand for the products of agriculture-based industries such as textiles, vegetable oils, the demand for non-food crops has also increased significantly. Due to the over-all scarcity of inputs for agricultural production, production of these crops can be increased largely by diverting area under food crops to non-food crops. In the last decade this diversion has taken place to a significant extent. For example, in Saurashtra about 80 per cent of the cropped area is now devoted to ground-

nuts. The total supply of farm products thus does not increase significantly in the short-run.

The reasons for the slow and inadequate increase in agricultural production are many. The major reason, however, is that production in traditional agriculture depends heavily on climatic factors and land. The abundant supply of labour without the adequate supply of co-operating factors would be of little help for raising production. Other production resources are not only limited in their supply, but when combined with given amount of land bring about less than proportionate returns. Hence, unless there is transformation of techniques of production the production level cannot be raised rapidly. And the process of transformation of techniques is itself slow since it involves dealing with complex social and economic factors.

The production of food and agricultural produce in general did increase during the first two Five-Year Plans. The annual compound rate of increase between the period 1949-50 to 1964-65 was 2.98 per cent for foodgrains, 3.61 per cent for non-foodgrains and 3.19 per cent for all crops.[1] If the base period is shifted forward, the rate of growth would appear to be much smaller. Further, there were disastrous crop failures in the years 1965-66 and 1966-67. But the increase in farm production was not uniform during the period. Though unfavourable weather was one of the main and immediate reason for this during the recent period, the basic fact remains that unless factors inherent in traditional agriculture that cause this stagnation are removed, increase in farm production would not be rapid and of permanent character.

Increasing production would normally lead to a corresponding increase in the marketed supplies. But this process may be impeded by other developments. The Foodgrains Enquiry Committee[2] which analysed the causes of decline in market arrivals

1 The increase has been calculated by fitting regression equations to three-year moving averages of the production index numbers. *Vide* Growth Rates in Agriculture 1949-50 to 1964-65, Ministry of Food and Agriculture, Government of India (1966) (Mimeo.).

2 Report of the Foodgrains Enquiry Committee, Ministry of Food and Agriculture (Department of Food), Government of India (1957), p. 45.

of foodgrains during 1955-56 and 1956-57 refers to three general factors: (*a*) the producers consumed more than before, (*b*) a tendency for holding grains for a longer period than usual developed in anticipation of further rise in prices and (*c*) the producers' need for cash to meet necessary commitments could be fulfilled with lower sales. The above reasons account for the situation in which more produce is marketed when prices fall and less is marketed when prices rise. This happens particularly when for most of the farmers the surplus is at best marginal, income elasticity of demand for foodgrains is high and the income effect of a change in price on consumption tends to be stronger than the substitution effect.

Besides, when prices are rising under an inflationary pressure, they generate a general tendency to prefer payment in goods rather than in money. For example, agricultural labourers may prefer payment of wages in kind rather than in cash and during busy season when demand for agricultural labour is at the peak level, *e.g.*, during harvesting or transplanting, the farmer-employer may be compelled to grant this demand. The marketed supplies of farm products may be adversely affected somewhat by this tendency as well.

A combination of above factors both on demand and on supply side, seems to have raised prices of food and other farm products relative to prices of other goods during the recent period for which the price data have been examined. Keeping these factors in view and experience of price management during the World War II and the post-war period, various measures to contain disproportionate price rises were evolved during the recent decade. The trends in prices that we have observed were thus subject to the economic factors, on one hand, and the Government regulations, on the other.

AGRICULTURAL PRICE POLICY AND MEASURES

Foodgrains

With the advent of planning in the 'fifties, the agricultural price policy became an integral part of planning for development. The basic considerations for the food policy were stated in the First Five-Year Plan: "Foodgrains occupy a pivotal place in

the price structure, and if this latter has to be safeguarded, as it must be, the prices of foodgrains must be held stable at levels within the reach of the poorer sections of the community. Even a moderate shortfall in the supply of foodgrains is likely, under Indian conditions, to raise their prices more than proportionately, and a rise in food prices leads directly to a rise in the cost of living and in production costs, all-round." So far as the interests of the farmer as producer are concerned, the Plan says: "This does not, of course, mean that the producer of foodgrains should not get a reasonable return. On economic as well as social grounds, it is vital that he does. But, the real return that he gets does not depend only upon the prices he obtains for his produce; it depends as much upon the prices he in turn has to pay for what he buys. If an increase in food prices raises these latter, he may be no better off in the end and may even be worse off." On the whole, the First Plan stressed the need for controlling the food prices and maintenance of certain maxima. It also referred to the need to prevent prices from falling below remunerative levels. However, according to the Plan,[3] "In the last analysis what limits the income of the primary producer is low productivity. To increase this latter, what is needed is a programme of public investment which will give him the water, the power, the seeds and the manures he needs."

The period between 1951 and 1957 — *i.e.*, the period during the First Five-Year Plan and first half of the Second Five-Year Plan — saw successive changes in Government policy from complete control to complete decontrol and back to partial controls. During the post-war and Korean boom periods, inflationary forces had gathered momentum and hence strict controls such as rationing, ban on inter-State movement of foodgrains, etc., were imposed. However, the supply situation improved during the initial period of the First Five-Year Plan and it seemed that the economy as such had been restored to a measure of equilibrium. The move towards decontrol that had started in June, 1952 with the abandonment of statutory rationing in Madras was further strengthened. The prices began to show downward trend and the balance was now swung in favour of

3 First Five-Year Plan, Planning Commission, Government of India (1953), p. 173.

complete decontrol. Government also announced support prices for wheat, jowar, maize, rice and gram. However, no steps were taken during this period to build up buffer stocks. This was a serious omission but at that time adequate storage facilities with the Government did not exist and the improvement in food situation was considered to be semi-permanent. However, this period of missed opportuniy revealed one thing — that the Government price policy was still one of expediency rather than of a purposeful long range plan. The declining trend of prices, as seen earlier, lasted only up to the middle of 1955 after which it was reversed.

In view of rising prices, the Government of India set up in 1957 the Foodgrains Enquiry Committee under the chairmanship of Shri Asoka Mehta. Its terms of reference were (i) to review the food situation and examine the causes of rising trend of food prices since the middle of 1955, (ii) to assess the likely trends in demand and availability of foodgrains over the next few years and to make recommendations to ensure a level of prices which would provide the necessary incentive to the producer with due regard to the interest of the consumer and maintenance of a reasonable cost structure in the country. The Committee came to the following conclusion: "The solution to the food problem, in our view, lies between complete free trade and full control. Food controls involve regulation of consumption, production and trade. Comprehensive controls of the war-time type extend to all these activities. But in less difficult situations, control of trading activity, supplemented by some regulations of consumption and directioning of production should be adequate and is, indeed, likely to give better results as a whole than full-scale control of distribution as well as supply. Such a *via media* will, no doubt, involve an appreciable degree of control, but that should be largely of a countervailing or regulating rather than restrictive character."[4] According to the Committee, the instability of food prices was expected to remain with us for some time to come. Hence it suggested that the State should assume the role of a 'dominant trader in the economy' in order to influence the demand for and supply of foodgrains through trade operations spread over time and space. This could be done by

4 Report of the Foodgrains Enquiry Committee, *op. cit.*, p. 77.

'(i) building up stocks in good years which can be drawn upon in bad years, (ii) purchasing stocks during harvest season which can be utilised during lean season and (iii) acquiring stocks in surplus States for disposal in deficit States. This was the essence of the policy of State trading in foodgrains. Its other specific recommendations were (i) formation of Foodgrains Stabilisation Organisation, (ii) licensing of wholesale dealers, (iii) continuation of marketing zones that the Government had established earlier in 1957, (iv) fixation of minimum and maximum prices, (v) maintenance of a reserve stock as distinct from a buffer stock for periods of real crisis and (vi) import agreements. The Foodgrains Stabilisation Organisation was to be organised with branches and agencies of its own in all important markets for undertaking buffer stock operations, that is, purchase and sale of foodgrains on a substantial scale with a view to controlling the prices. Policy making and operational functions of this organisation were to be divided into two distinct parts. The Government accepted many of these recommendations especially pertaining to regulatory measures. But instead of setting up a separate Foodgrains Stabilisation Organisation, the Government decided to utilise the purchase organisation in the Department of Food to ensure adequate and continuous contact with the market.

The price policy as enunciated in the Third Five-Year Plan embodies majority of the recommendations of the Foodgrains Enquiry Committee. The Plan says :[5] "The farmer should have the necessary incentive to make these investments (investments in fertilizers, adoption of improved practices, etc.) and to put in a larger effort. A policy designed to prevent sharp fluctuations in prices and to guarantee a certain minimum level is essential in the interest of increased production. It is important also that the appropriate measures or policies should be enunciated and announced well in time to ensure that the benefit accrues to the farmer. The other objective, no less essential, is to safeguard the interests of the consumer, and,...it is particularly necessary to ensure that the prices of essential commodities such as foodgrains do not rise excessively. ... The key to stabilisation is the building up of buffer stocks and operating on them through

5 Third Five-Year Plan, Planning Commission, Government of India (1961), pp. 130-131.

continuous purchase and sales over a wide front. Since prices vary between different parts of the country, there may be purchasing operations in some parts and selling operations in others." On operational side the Plan says: "A network of co-operative and governmental agencies close to the farmer, licensing and regulation of wholesale trade, extension of State trading in suitable directions and a considerable sharing by Government and co-operatives in distribution arrangements at retail stage are essential for the success of purchase and sale operations for stabilising prices and correcting seasonal and regional variations."

Several measures were taken to implement this price policy. The chief measures taken were: ban on exports of cereals from India; arrangements for imports from abroad under special terms, *e.g.*, P.L. 480; internal procurement of rice and wheat, distribution of imported and internally procured grains at reasonable prices; demarcation of marketing zones (demarcation is flexible depending on the circumstances), regulation of forward trading; licensing of wholesale dealers; restrictions on bank advances against the hypothecation of foodgrains; fixation of minimum prices, imposition of floor and ceiling prices, etc.

State Trading in Foodgrains

A provisional scheme for giving effect to the Foodgrains Enquiry Committee's suggestion on State trading was announced by the Government in April, 1959. It was announced that State trading would be confined to two main commodities — wheat and rice — and the whole operation would be conducted on no-profit no-loss basis. The Government decided to set up an agency for making direct purchases from the producers at controlled prices which would be generally uniform for the whole State or the region. This decision was taken with a view to assure a minimum price to the producers. The wholesale traders and millers in wheat and rice were licensed throughout the country. They were allowed to make purchases on their own but were required to pay to the farmer the minimum price fixed by the Government. One of the main objectives of the licence for wholesale traders was to enable the Government to impose a levy on wholesale traders and on rice mills to obtain such proportions

of the quantities purchased by them as may be required. They were allowed to sell the remaining stock to the retailers at prices not exceeding the controlled prices. The retail transactions were not brought within the orbit of State control as it would have involved large scale intervention by the State and imposed a severe administrative burden on it. However, it was decided to influence the retail prices by increasing the number of fair price shops and speeding up the formation of consumers' co-operative societies. On the whole, it was implied that existing market arrangements would not be disturbed and the changes were visualised within the existing framework.

Accordingly this scheme was put into practice and the procurement operations in rice and wheat which were confined mostly to surplus areas in the preceding seasons were extended to deficit areas too as recommended by the Foodgrains Enquiry Committee. However, the scheme ran into difficulties[6] as it was put into practice in a haphazard way, without taking into cognizance the economic forces. In Uttar Pradesh, for example, the procurement prices for wheat were fixed much lower than those dictated by the forces of demand and supply. With the result, market arrivals of foodgrains were low despite large output. Besides, the extent of compulsory levy imposed on wholesale traders was exorbitant in some States. For example, in Uttar Pradesh compulsory levy of 50 per cent of the stock and subsequent purchases was imposed on wholesale dealers as well as on *Kacha Arhatiyas* (commission agents of the producers). This broke the traditional link between the producer and the market.

In Punjab, on the other hand, the Government assumed only the right of prior purchases of the whole or any part of market arrivals at prices arrived through the normal process of bidding in the market. The working of the scheme was, therefore, quite successful and did not result in dislocation of normal functioning of the market.

6 Refer to the Report on an Enquiry into the Pace and Pattern of Market Arrivals of Foodgrains — 1958-59 Season, Directorate of Economics and Statistics, Ministry of Food and Agriculture, Government of India (1959).

On the whole, the experience of State trading was not very happy. In deficit areas, it pushed up the prices. The buffer stocks can be built up adequately and fruitfully in the years when prices are falling. The earlier years up to 1955 provided that opportunity but it was missed. The principle of State trading began to be accepted rather very late, though this was not altogether a new concept. This measure has been successfully attempted in many countries and even in our country the suggestion of State trading was put forward by the Prices Sub-Committee of the Policy Committee on Agriculture, Forestry and Fisheries as long back as in 1944.[7] In periods of rising prices, a tendency to withhold supplies from the markets arises. And this price consciousness of the producer was buttressed further during these years with his capacity to withhold his produce. High prices in the past have left enough cash income with some farmers to meet their immediate needs. Most of them are, therefore, not under the compelling necessity to part with their harvest immediately. Moreover, due to Plan programmes the producers have better access to cash resources including co-operative credit, government loans, grants, etc., the extent of which has been steadily increasing. All these factors contributed to failure of State trading in 1959. The procurements were, therefore, given up in the deficit areas completely and in other areas they were made less ambitious.[8]

Measures for Non-Foodgrains

The measures for regulating or controlling prices of non-food commodities like cotton, jute, oilseeds, sugar, etc., have varied from time to time depending upon prevailing supply situation. In times of rising prices, restrictions are imposed on forward trading and exports, imports are liberalised and selective credit controls are imposed. On the other hand, in times of downward trend in prices imports are reduced, export quotas are liberalised, etc.

7 Report of the Prices Sub-Committee of the Policy Committee on Agriculture, Forestry and Fisheries, 1944, Government of India (1947), p. 167.

8 Recent policy in regard to foodgrains distribution based on the recommendations of the Foodgrains Policy Committee set up in March, 1966 is discussed in Chapter III — Food Supply and Nutrition.

For example, in the case of oilseeds there are no statutory price controls but the prices are sought to be influenced in desired directions by means of changes in foreign trade policies, regulation of forward trading, control on bank advances against hypothecation of stock of these commodities, etc. During the last decade, oilseed prices, as seen earlier, have ruled high and hence exports have been restricted.

In the case of cotton, both statutory minimum and maximum prices have been enforced since 1943 but here too the main mechanism of control has been through export-import policies, control over movement and distribution, regulation of forward trading, etc.[9]

Jute is another important commodity in the case of which some steps are taken for stabilising prices at a level that would be economic to the grower as well as the jute industry. From 1959-60 to 1960-61 jute prices tended to move very high and hence imports were stepped up, and restrictions were imposed on forward transactions and purchases by jute mills. When jute price declined in 1964 — and again in 1968 —, a Buffer Stock Agency was set up to undertake purchase operations.

On the whole, it can be said that these regulations are of a very broad nature and compared to foodgrains, prices of non-foodgrain commodities are given more free play. It is because of this that relative price variability in the case of these commodities is higher compared to that of foodgrains.

Recent Measures: Agricultural Prices Commission

In January, 1965, the Government of India constituted an Agricultural Prices Commission. Initially set up for three years, the Commission will continue as long as necessary and will periodically submit reports to the Government on agricultural commodities.

The terms of reference of the Commission are:

1. To advise on the price policy of agricultural commodities, particularly paddy, rice, wheat, jowar, bajra, maize, gram

9 The ceiling on cotton prices has been removed from 1st September 1967.

and other pulses, sugarcane, oilseeds, cotton and jute with a view to evolving a balanced and integrated price structure in the perspective of the overall needs of the economy and with due regard to the interests of the producer and the consumer;

2. To recommend from time to time, in respect of different commodities, measures necessary to make the price policy effective;

3. To examine, where necessary the prevailing methods and costs of marketing of agricultural commodities in different regions, suggest measures to reduce costs of marketing and recommend fair price margins for different stages of marketing;

4. To keep under review the developing price situation and to make appropriate recommendations, as and when necessary, within the framework of the overall price policy;

5. To keep under review studies relating to the price policy and arrangements for the collection of information regarding agricultural prices and other related data and suggest improvements in the same; and

6. To advise on any problems relating to agricultural prices and production that may be referred to it by the Government from time to time.

Since its inception, the Agricultural Prices Commission has been making recommendations every year for the minimum support prices for *Kharif* and *Rabi* cereals, cotton, jute, oilseeds and sugarcane and the Government announces the same after consultation with State Governments and other interests concerned. This implies that the Government stands committed to purchase at the stipulated minimum price as much quantity of the crop as may be offered. Except for jute in 1968 — and for a brief period in isolated spots for some cereals — the ability of the Government to fulfil its commitment has not been tested as yet. In regard to jute, however, the purchasing machinery has not been adequate enough to prevent sliding down of prices, though marginally, below the support level.

The Agricultural Prices Commission has not laid down any set formula for determining the level of the minimum support

prices. In determining the guiding criteria for the level of support prices, it is necessary to be clear about their purpose. Minimum support prices are primarily meant to provide an assurance to the farmer that his efforts to augment production will not become unremunerative as a result of a severe fall in prices. They are not supposed to indicate a desirable level of market prices in normal times. They are an insurance against an adverse contingency. Keeping this in view, it has been suggested that the minimum support price should at least cover the average cost of cultivation of progressive farmers. The practical application of even this principle poses several difficulties. Concepts of cost of cultivation differ and such data as are available are not only inadequate but reveal such diversity that mere averaging will serve no useful purpose.

The Agricultural Prices Commission also makes recommendations every season for procurement prices for commodities which require to be procured as a part of Government policy. In doing so, the Commission keeps in view its terms of reference generally and such other relevant factors like the demand and supply conditions, recent price trends, relative prices of other commodities, impact on cost of living, cost of industrial production and exports.

CHAPTER XII

AGRICULTURAL FINANCE

In the context of planned agricultural development of the country, provision of adequate credit for short-term, medium-term and long-term needs of the agriculturist becomes a vital issue. The agriculturist in India, due to the small size of his farm and low productivity of land because of traditional methods of cultivation, has hardly any savings of his own. He has, therefore to depend in the main, on borrowings from private moneylenders and to some extent, credit institutions. His dependence on the former comprising agriculturist and professional moneylenders, traders, merchants and commission agents, relatives and others and, in particular, on the village moneylender continues to be large. The institutional agencies which cater to the credit needs of the agriculturists are Government, co-operatives and commercial banks. During the Second and Third Plan periods, the role played by the co-operatives has been expanding rapidly. The contribution by the Government continues to be small and that of commercial banks insignificant. On the whole, the total resources provided by these three institutional agencies did not meet more than a quarter of the total credit requirements of the agriculturists in 1961-62. In view of the recent evidence of a technological break-through in agriculture, a transformation from traditional to a market-oriented developed agriculture appears to be imminent. . This will call for larger resources for capital investment in agriculture as well as for working capital requirements in production, marketing, processing, etc. The problem of meeting these growing credit requirements in a developing agricultural economy is one not only of enlarging the supply of credit and extending it on reasonable terms and conditions but also of building up an institutional structure that will take an integrated view of the various requirements of the agriculturist and enable him to organise his farm economy at a higher level of technical efficiency on sound economic basis.

According to the All-India Rural Credit Survey Report, the total borrowings of cultivators for the country as a whole for the year 1951-52 were estimated at Rs. 750 crores. A sourcewise distribution of these borrowings pointed out the predominance of private moneylenders as a source of finance as they accounted for 70 per cent (made up of 45 per cent from the professional moneylenders and 25 per cent from the agriculturist money-lenders) of the total borrowings. The other non-institutional agencies accounted for 23 per cent. The institutional agencies accounted for 7.3 per cent of the total. The All-India Rural Debt and Investment Survey conducted by the Reserve Bank of India estimated the borrowings of cultivators in 1961-62 at Rs. 1,029 crores, showing an increase of 38 per cent over that in 1951-52.[1]

During the decade following the publication of the Rural Credit Survey Report, the pattern of distribution of borrowings of cultivators according to sources of finance showed a shift in favour of institutional agencies as the share of the private credit agencies in the total borrowings of the cultivators declined to 81.3 per cent in 1961-62 from 92.7 per cent in 1951-52. Among the private agencies the agriculturist moneylender predominated over the professional moneylender, the share of the former in the total borrowings was 36 per cent and that of the latter 13 per cent. The share of the relatives also declined to 9 per cent from 14 per cent. On the other hand, the share of the trader increased from 6 to 9 per cent and of 'others' from 2 to 14 per cent. 'The rise in the share of 'others' was due to inclusion of dues owed to shopkeepers, doctors, etc., which were not covered in the 1951-52 Survey. The share of the institutional agencies rose mainly because of the sharp increase in loans and advances by co-operative agencies, which accounted for 15.5 per cent of total borrowings of cultivators as against 3.1 per cent in 1951-52. The share of Government

1 Some limitations of the data, which affect the scope as well as the validity of the comparison of the two surveys may be noted. Firstly, while the selection of districts and villages for the All-India Rural Credit Survey (AIRCS) was not done with a view to providing statistically valid estimates, the All-India Rural Debt and Investment Survey (AIRDIS) was specially designed to yield statistically valid estimates at the level of individual States and all-India. Secondly, the AIRCS data on borrowings relate to the twelve-month period preceding the month of visit by the investigating staff, *i.e.*, to any twelve months occurring between December, 1950 and February, 1952. On the other hand, the AIRDIS data on borrowings pertained uniformly to the year ended June, 1962.

and commercial banks declined to 2.6 and 0.6 per cent from 3.3 and 0.9 per cent, respectively. Thus during a period of one decade, the co-operatives recorded a five-fold increase in their lendings and in the process improved their ranking standing next to moneylenders in the provision of credit in the rural areas. In this chapter, it is proposed to outline the role of the Government and private moneylenders in the provision of agricultural credit. The progress of co-operative movement is reviewed in the following chapter.

GOVERNMENT FINANCE FOR AGRICULTURE

Takavi is the ancient and traditional form of Government assistance to the agriculturist and dates back to the Indian rulers of the pre-British era. It has been essentially distributed to relieve distress caused by droughts, floods and other natural calamities and to assist the farmer to tide over emergencies and restart his agricultural operations in the following year. The advancing of loans by Government to finance the emergent needs of the agriculturist on a regular basis began towards the end of the century with the passing of the two legislative measures, (i) the Land Improvement Loans Act of 1883 and (ii) the Agriculturists' Loans Act of 1884. The former is broadly concerned with the long-term loans, and the latter with the short-term accommodation. Both these Acts were passed on the recommendation of the Famine Commission of 1880. *Takavi*, therefore, came to play an important role in times of famine and distress. The fact that these Acts or their derivatives have been in operation in all States (except Kerala, Rajasthan and Jammu & Kashmir where specific Acts are in operation) and the fact that disbursement is generally made through the revenue agency have brought about a certain measure of uniformity in the system of *takavi* in most States. Since the World War II and particularly after Independence, loans and grants made under the Grow More Food Schemes, schemes of rehabilitation of displaced persons and the Community Development Programme have resulted in a noteworthy expansion of *takavi* finance without, however, making any significant alteration in its administrative and legal framework.

Takavi loans are advanced mainly for the purposes of purchase of seeds, manures, fertilizers and cattle, bunding and levelling up of land, undertaking soil conservation works, digging and

repair of wells, installation of pumping sets, persian wheels, etc., construction and maintenance of irrigation channels, reclamation of waste land, purchase of agricultural implements and machinery such as tractor, etc., adoption of plant protection measures, adoption of improved agricultural practices, establishment of orchards, purchase of fodder for cattle, consumption loans to cultivators for their maintenance during cultivation season following droughts, floods or other natural calamities and undertaking repairs and reconstruction of houses damaged by floods, etc. Loans issued for giving relief to persons who have been victims of floods, famines, etc., are not shown as such, but are described in the relevant loan bonds as for one or more of the purposes listed. The nature of security usually demanded for Government loans is immovable property. The loans, however, are advanced at low rates of interest.

In recent years, especially since the commencement of the First Five-Year Plan, there has been a substantial stepping up in the finance by the Government to agriculturists by way of loans. Table I indicates the volume of such advances made by the State Governments since 1948-49.

TABLE I

LOANS AND ADVANCES TO AGRICULTURISTS

(Rs. in crores)

Year	Amount advanced
1948-49	11.1
1950-51	14.0
1955-56	33.1
1960-61	31.2
1961-62	32.3
1962-63	39.3
1963-64	40.9
1964-65	51.0

The quantum of distress finance cannot be exactly ascertained in the absence of adequate data. But according to the Committee on Takavi Loans and Co-operative Credit, it may be

taken at about one-third to one-fourth of the total.[2] Available data regarding overdues which are subject to limitations, presented in Table II indicate a deterioration in the overdues position.

TABLE II

OVERDUES POSITION

(Rs. in crores)

Particulars	1958-59	1959-60	1960-61
1. Demand for the year	51.9	56.2	59.6
2. Amount recovered during the year	21.8	19.4	21.8
3. Overdues at the close of the year	30.3	36.9	37.7
4. Outstandings at the close of the year	106.0	119.2	138.6
5. Percentage of overdues to demand	58.3	65.7	63.3
6. Percentage of overdues to outstandings	28.6	30.9	27.2

N.B.: Data relate to all States except Jammu & Kashmir for which figures were not available.

In spite of a large increase in the quantum of Government finance, the total resources provided are still inadequate in relation to needs. Further, as the Rural Credit Survey pointed out, the benefits of this assistance do not always reach the small farmer. For, according to it, the all-India average of borrowings per cultivator from the Government was Rs. 24 for big cultivators whereas the same for the small cultivators was only Rs. 4. Altogether the large cultivators, who constituted about 30 per cent of the total number of cultivators, accounted for nearly 60 per cent of the loans from Government. In contrast, the share of the small cultivators who formed 30 per cent of the total number of cultivators was only 10 per cent of the loans from Government. A similar feature, that of loans from Government being availed of by the better off classes of cultivators, is evident from the findings of the All-India Rural Debt and Investment Survey, 1961-62. According to it, cultivators possessing assets, including land, worth Rs. 20,000 and above, *i.e.*, the highest asset group constituted 6.4 per cent of the total number of cultivators in the country. However, they accounted for 37 per cent of the

2 Report of the Committee on Takavi Loans and Co-operative Credit, Ministry of Community Development, Panchayati Raj and Co-operation (Department of Co-operation), Government of India (August, 1962) (Mimeo.), p. 27.

loans from Government. In view of the fact that land constituted the bulk of the assets of these cultivators, the explanation for the uneven distribution lay in the fact that medium-term loans and long-term loans for improvement, which constitute the bulk of loans, are normally sought by the comparatively well-to-do cultivators. Further, smaller land holders and tenants cannot avail of *takavi* loans as they are unable to furnish the security as required under the rules.

The security for *takavi* loans can be the following:

(*a*) The borrowers' interest in the land to be improved.

(*b*) Collateral security of other lands belonging to the borrower, or the surety offered by other persons to support the claims of the borrower.

(*c*) Joint security of the village community or a group of cultivators.

However, in practice, emphasis is laid on the ratio of loans granted to the value of the collateral security. The undue emphasis on property as a basis for security was referred to by the Grow More Food Enquiry Committee (1952), which observed that *takavi* loans for sinking wells could not be availed of by the smaller land holders and tenants in many cases due to lack of land or other security to offer. The result has been vividly brought out by the Rural Credit Survey Report, according to which, *takavi* advances against security of immovable property in comparison with the total advances by Government constituted 100 per cent in Hyderabad, 99 per cent in Mysore, 97 per cent in Bombay, 95 per cent in Vindhya Pradesh, 89 per cent in Madras, 79 per cent in Madhya Pradesh and 75 per cent in Punjab.[3] Further, complaints have also been made against the system of entrusting the distribution of *takavi*, in kind, to local committees, for, the persons who constitute these local committees were quite often representatives of the upper classes and land holding interests in the village. Therefore, considered as a system of supply of credit to the cultivators, *takavi* suffers from defects

3 Report of the Committee of Direction, All-India Rural Credit Survey, Volume II—The General Report, Reserve Bank of India (1954), p. 202.

which result in "inadequacy of amount, inequality of distribution and inappropriateness of the basis of security."[4]

Besides, the other undesirable features of *takavi* finance relate to too much delay in disbursement of the loan, inadequate supervision and lack of co-ordination between the different departments concerned with the operation of the system. These deficiencies can be traced to the administration of these loans, which is in charge of the revenue agency and recently of agriculture, community development and rehabilitation departments. The officials of these departments are burdened with multifarious duties and are ill-equipped to deal either with the task of assessing credit requirements or supervising the use of the credit when granted. Further, while all the departments are empowered to issue loans for the purposes enumerated earlier there was the problem of co-ordination between them. Therefore, the system of *takavi* loans is prone to considerable overlapping. Moreover, co-operative credit societies and co-operative land mortgage banks also advance loans for the purposes for which *takavi* loans are granted. The result is that excessive credit is granted in an unco-ordinated manner to some persons, particularly bigger and influential cultivators while it is denied to others who are equally needy but lack influence.

As to whether *takavi* system was suitable for supplying the credit needs of cultivators was examined by several committees. The Indian Central Banking Enquiry Committee (1931) held the view that the Government cannot obviously provide all the credit requirements of agriculturists and that at the same time piecemeal and sporadic supply of a fraction of such requirements was sure to fail. The Agricultural Finance Sub-Committee (1944) also agreed with the above view and added that the system of *takavi*, which originated in times of distress and famine, should continue to operate as distress finance. The Rural Credit Survey Committee characterised *takavi* "to be little else than the ill-performed disbursement of inadequate moneys by an ill-suited agency,"[5] and recommended that the Government finance should be strictly limited, subject to transitional exceptions, to periods

4 *ibid.*, p. 199.

5 *ibid.*

of widespread distress, on the ground that any large institutional development on the part of the Government for providing timely and adequate credit to millions of agriculturists is beyond its administrative and financial resources.

The consensus of opinion has, therefore, been against the continuance and development of the system of *takavi* as a regular source of supply of credit to agriculturists. This view found favour with the Government, which, through a resolution passed in the National Development Council in November, 1968, considered it essential to channelise *takavi* loans and allied facilities through co-operatives. The object is to create conditions in which every rural family will find it advantageous to join the village co-operative, the only agency at that level, which should supply credit to agriculturists. The organisational, procedural and administrative difficulties that came in the way of successfully implementing the policy of routing *takavi* loans through co-operatives were examined, among other things, by the Committee on Takavi Loans and Co-operative Credit appointed by the Government of India in July, 1961. In its report the Committee recommended the discontinuance of *takavi* loans for normal production and land improvement purposes to agriculturists direct. However, for certain purposes, certain areas and certain classes of people, Government will have to provide finance direct because of technical nature of operations or the financial risks involved or delayed returns on investment or the weakness of co-operatives. In all other cases, funds available with the Government for granting loan to agriculturists should be utilised to supplement the resources of the co-operatives, which should be accepted as the agency for disbursing agricultural credit. Further, the Committee indicated that Government should continue to make budgetary provisions in an increasing measure for financing agriculturists and utilise such provisions for strengthening the structure and resources of the co-operatives.[6]

MONEYLENDER FINANCE

As pointed out already, in spite of the rapid progress of co-operative movement, the private moneylenders still continue

6 Report of the Committee on Takavi Loans and Co-operative Credit, *op. cit.*, pp. 62-63.

to dominate the field of agricultural finance, though their relative importance has decreased to some extent. Again, among the various categories, the professional moneylender had lost his pride of place to the agriculturist moneylender. According to the AIRDIS, of the total borrowings of cultivators in 1961-62, the agriculturist moneylenders supplied 36 per cent as against only 13.2 per cent by the professional moneylenders. The share of other private agencies was: traders and commission agents 8.8 per cent, relatives 8.8 per cent, landlords 0.6 per cent and others 13.9 per cent. As pointed out earlier, during the decade ending 1961-62, the importance of the professional moneylenders seem to have receded from 44.8 to 13.2 per cent, while the agriculturist moneylenders' share rose from 24.9 to 36 per cent.

The monopolistic position enjoyed by the moneylender in the field of agricultural credit and the various devices used by him to extort the maximum possible from his helpless debtors have been the subject of much comment and discussion mainly from the point of view of regulating his usurious activities and providing relief to the agriculturist debtors from the heavy burden of indebtedness. However, it must not be forgotten that the moneylender as a credit agency had some advantages. In particular, he adapted his practices to the needs of the situation, at a time when neither Government finance nor co-operative finance was available and provided credit, which was a matter of great importance to the agriculturists. Further, his terms and conditions were flexible depending on his personal assessment of each borrower and provided prompt service being ready at hand as a member of the rural community to which the borrower also belonged. In the circumstances, the moneylender was quick enough to provide credit. But these advantages were overshadowed by the disadvantages. Taking advantage of the helplessness of the borrower and lack of alternative credit agencies, not only were they able to dictate terms in regard to the rates of interest but also succeeded in limiting the freedom of action of their borrowers in many other directions depending upon their other interests as landlords, traders, etc. In this they were helped albeit inadvertently by two sets of forces. Firstly, the village economies were shedding the social relationships based on custom and tradition and the fairly stable occupational balance was

giving way. As the population grew, pressure on land was accentuated and the scramble for land began. The money value of land and therefore its value as security for credit went up. Since land was almost the only security that the agriculturist had to offer, his failure to repay loans secured against it meant, in due course, alienation of land and hence his means of livelihood. In this, the moneylenders were helped by the second set of forces, *viz.*, the introduction of the Roman system of jurisprudence with its emphasis on the sanctity of written contract which enabled them under the new Code of Civil Procedure to acquire ownership of their borrowers' lands in execution of court decrees without regard to the circumstances in which a contract was made. It was the combination of these peculiar circumstances which, on the one hand, led to a rapid increase in the size of agricultural debt in the country and, on the other, made moneylending an instrument of exploitation of the poor peasants. Government had, therefore, to meet the situation arising out of this situation, which led from the middle of the 19th century to peasant uprisings in several parts of the country, by scaling down rural debts and regulating moneylending.

Regulation of Moneylenders

The first attempt at regulation of private moneylending business was made after the Deccan riots, when the Deccan Agriculturists' Relief Act was passed in 1879. This Act laid down that in suits by or against agriculturists it was open to the court to examine the motive of the debt and to make out an account of the money due. The court, in taking an account of the transactions, could reduce the rate of interest if it considered it unreasonable. The Royal Commission on Agriculture, 1928, however, found that the provisions of the Act were frequently evaded. Another legislation bearing on the subject was an amendment to the Indian Contract Act in 1899 which provided for relief to debtors in cases of unconscionable bargains, on proof of undue influence or where the bargain contained any stipulation by way of penalty. This amendment also proved ineffective in the context of the ignorance and illiteracy of the borrowing class and their pressing need for money. Similar principles were embodied in the Usurious Loans Act, 1918. The Act authorised

the court when it found that the interest was "excessive" and the transaction between the parties "substantially unfair," to reopen the transaction and to relieve the debtor of all liability in respect of any excessive interest. Due to vagueness surrounding both criteria, referred to above, this Act also proved ineffective. Besides, the Act was found to apply only in suits by creditors and therefore, the debtors had to drive the former to court to avail the benefit of the Act. Even when this difficulty was overcome by an amendment in 1926, the Act was of limited utility inasmuch as the courts could not give any retrospective effect to its provisions.

Therefore, the need for regulating the moneylenders' business was emphasized by the Royal Commission on Agriculture in India in its report (1928) as also by the various Provincial Banking Enquiry Committees. The former recommended the adoption of the principle underlying the Punjab Regulation of Accounts Act, 1930 and the British Moneylenders' Act, 1927. The views of the Banking Enquiry Commitees were, however, more varied. The Conference of representatives of Provincial Governments called in 1934 decided that the matter of regulation of moneylending should be left to the discretion of the local authorities. Since then almost all the States have passed laws to regulate the business of moneylending.

The basic objectives underlying the various legislative enactments on regulation of moneylending can be broadly stated to be (*a*) to bring about an improvement in the terms on which private credit was available to the agriculturists and place legal restrictions on the unreasonable exactions of the moneylenders, and (*b*) to enable the civil courts to do greater justice as between the lenders and the borrowers than was possible, under the ordinary Code of Civil Procedure.

To the first category belong such provisions as (1) licensing and/or registration of moneylenders, (2) fixation of maximum rates of interest and (3) maintenance of accounts by moneylenders, grant of regular receipts, etc. To the second category belong such provisions as (1) the empowering of the courts to 'reopen' the closed transactions and go behind the written contract, (2) protection of certain forms of assets from attachment

in execution of decrees and (3) the empowering of the court to direct payment of decretal amount by instalments.

It is clear from the nature of these provisions that by far the most important provisions are those relating to the first category, because a court can invoke the provisions under the second category only if the debtors approach it. It so happens that it is invariably the moneylender who approaches the court for a decree against the borrower as he is in a very strong position socially and economically as compared with the general run of his debtors.

Registration and Licensing of Moneylenders

Under most of the Acts, it is compulsory for moneylenders to get registered and licensed. Those moneylenders, who do not hold any registration certificate, are either debarred to have recourse to courts of law for the recovery of their dues or are liable for severe penalties. The working of this Act in Punjab and Bombay indicates that a large proportion of moneylenders still carry on their business without licence. This is presumably due to the realisation by moneylenders of the futility to go to court. It may also be due to the fact that the term "moneylender" is not always sufficiently comprehensive to cover all moneylenders. Moreover, a number of loans, loans to traders, for example, are exempted from the operation of these Acts. As a result, the sifting of the various kinds of loans for applying the Act, to such of them as come under it, becomes an extremely complicated task and provides a way of escape for many an ingenious moneylenders.

Regulation of Interest

The rates of interest permitted under the different Acts are shown in Table III.

In most of the Acts, a distinction is made between secured and unsecured loans, the former having a lower rate of interest. In some of the States, compound rate of interest is forbidden. In some States, as for example in Uttar Pradesh, the arrangement is elastic in that the Government will notify the rate of interest

TABLE III

MAXIMUM RATES OF INTEREST ALLOWED IN VARIOUS STATES

State	Relevant Act	Simple interest (per cent per annum)		Compound interest (per cent per annum)
		Loans secured	Unsecured loans	
Assam	The Assam Money-Lenders Amendment Act, 1943 (Sec. 4)	9⅜	12½	Prohibited
Andhra Pradesh	The Andhra Pradesh Money-Lenders Regulation, 1960	9	12	—
Bihar	The Bihar Money-Lenders Act (Sec. 9 & 10)	9	12	Prohibited
Gujarat	The Bombay Money-Lenders Act, 1946 ...	12	15[1]	—
Madhya Pradesh	Usurious Loans Act, 1918	12	18	10
Madras	Madras Money-Lenders Act, 1957 ...	9	12	—
Orissa	The Orissa Money-Lenders Act, 1939 (Sec. 9)	9	12	—
Punjab	The Punjab Relief of Indebtedness Act, 1940	7½	12½	—
Uttar Pradesh	The United Provinces Debt Redemption Act, 1940 (Sec. 9(2))	4½	6[2]	—
West Bengal	West Bengal Act XXI of 1965 and West Bengal Act XXVIII of 1966	10	12½	—
Mysore	Mysore Money-Lenders Act, 1961 ...	15	18[3]	—
Kerala	Kerala Money-Lenders Act, 1958 ...	9	12	—
Rajasthan	Rajasthan Money-Lenders Act, 1963 ...	9	12[4]	—
Maharashtra	The Bombay Money-Lenders Act, 1946	12	15[5]	—
Himachal Pradesh	H. P. Debt Reduction Act, 1953 (Sec. 8(2))	6	12	—

Source: Agricultural Legislation in India, Vol I — Regulation of Money-Lending, Directorate of Economics and Statistics, Ministry of Food and Agriculture, Government of India (1956), pp vii-viii; and relevant Acts passed by the various States.

1. These rates are effective from 31st October, 1965.
2. In case of agriculturists and workmen only.
3. Effective from 1st April, 1965.
4. Effective from 1st October, 1965.
5. Effective from 28th December, 1965.

in consonance with the money market conditions in regard to loans prior to the Agriculturists Relief Act, 1934. On loans contracted subsequent to the Act, the rate of interest varied according to the amount of the loan, it being lower, the larger the amount of loan.

In most of the States (Assam, Bengal, Bihar, Madras, Madhya Pradesh, the Punjab and Uttar Pradesh), reduction in payment towards accumulated interest was adopted by adopting the rule of *Damdupat*. Under this principle, in Madras, a debtor need not pay anything more towards the debt when he has paid twice the principal of the loan. In several other States, the payment of a sum greater than the principal towards the arrears of interest is prohibited.

MORATORIUM

The world depression of 1929 which impoverished most of the cultivators necessitated, in addition to regulating the business of moneylending, some measures of relief to the agriculturist debtors. Being weighed down by a crushing load of debt, it was impossible for them to get even a subsistence income from their lands when agricultural prices had fallen almost to half. The Provincial Governments therefore tried to devise measures of immediate and speedy relief. The earliest means adopted was of granting a moratorium to prevent the rush of suits and wholesale execution of decrees during the period of formulation of debt relief measures. Moratorium laws were passed during the 'thirties in the States of Uttar Pradesh (1934 and 1937), Bombay (1938), and Central Provinces and Berar (pre-reorganised Madhya Pradesh) (1938).[7] The main object of this legislation was to stay the proceedings against the agriculturist debtors for debts or arrears of rent, etc., and to prevent for a certain period (usually one year), the transfer of land or other assets of the debtor to the creditor. While this legislation gave some time to the Provincial (now State) Governments for bringing forth comprehensive legislation on debt relief it also saved the distressed agriculturists from harassment of litigation and from the transfer of their property to creditors in

7 *Vide* Agricultural Legislation in India, Vol. VIII—Relief of Agricultural Indebtedness, Government of India (1958), p. x.

execution of court decrees at the then prevailing low prices. It also gave an opportunity to the debtor to stabilise or improve his position during the interval and to develop a capacity to discharge his obligations without parting with his productive assets.

In the remaining former Provinces, the Debt Relief Acts provided for staying proceedings in suits and decrees on the application by the debtors for conciliation of debts and thus indirectly granted a moratorium in respect of their loans. The moratorium thereafter varied with the length of time taken by the Conciliation Boards to settle the debts.

CONCILIATION OF DEBTS

With a view to bringing about amicable settlement of debts, Debt Conciliation Acts were passed in the Madhya Pradesh (1933), the Punjab (1934), Assam (1935), Bengal, Madras (1936) and in some of the Indian States. Under these Acts, Conciliation Boards came to be set up for adjusting the available assets of the debtors to the total debts and facilitating repayment in a reasonable number of instalments. Such a reduction in debt was permitted only when creditors to whom 40 per cent (in the case of Madras) of the debts were owed agreed to an amicable settlement. Creditors who refused to agree to the Board's decision were placed under certain disabilities in recovering their dues (*e.g.*, disallowance of costs of suit and simple interest in excess of 6 per cent) while the claims of those who accepted it were given priority. The jurisdiction of the Boards was generally one or two talukas. Facilities were granted to the creditors to realise the instalment amounts through the revenue officers so as to induce them to join in an agreement. In Bengal, the awards were made negotiable by providing that the right to receive any amount payable under an award could be assigned in the manner prescribed in the Act.[8]

The working of these Boards brought considerable relief to the cultivators. In the Punjab, during the year ending 31st December, 1940, the Conciliation Boards disposed of nearly 26,000 applications involving Rs. 246 lakhs; the debts which

8 *Cf.* K. G. Sivaswamy: Legislative Protection and Relief of Agriculturist Debtors in India (1939), p. 266.

were actually admitted amounted to Rs. 91.45 lakhs of which the debtors agreed to pay Rs. 35.85 lakhs. Debts admitted on creditors' application only amounted to Rs. 14.42 lakhs of which the debtors agreed to pay Rs. 4.19 lakhs. In Madras, a total of Rs. 508 lakhs was reduced to Rs. 265 lakhs during the 28 months ending June, 1940. Between 1938 and 1950, only a little more than Rs. 10 crores of debt or about 4 per cent of the indebtedness could be scaled down, benefiting hardly 5 per cent of the total number of agriculturists.[9] In Bengal, during 1937-38, debts amounting to about Rs. 5 crores were scaled down all over the Province. The amount of debt disposed of till 1945 represented only 18.9 per cent of the total rural indebtedness in the State. In Uttar Pradesh, till 1945-46, the amount dealt with was Rs. 7.1 crores, which formed 29.6 per cent of the total debts.[10]

Defects in Working

The exclusion of certain classes of debts under these Acts has restricted the scope of benefit. Thus, for example, rent debts, co-operative debts, debts due to banks, trade debts and debts due to Government are partially or totally excluded from many of the Acts, or they are included in the Acts subject to certain difficult conditions. The inability of the illiterate debtor to give the names of some of his creditors makes conciliation of many debts difficult, since it would be unfair to cancel the debts of creditors to whom no notice has been served. Fraudulent practices such as false transfers and bogus mortgage deeds hamper settlement of debts but many of the Conciliation Acts do not empower the Boards to dismiss such applications. In most of the Acts there is no provision to settle the debts of an individual debtor in case of joint debts unless all the debtors apply for settlement.

As a result, applications from debtors who are a party to joint debts have failed to receive consideration from the Boards. Where the Board tries to decide the validity of disputed debts, its labour is wasted because its decision is not made binding. Applicants are also rejected by the Board for reasons such as

9 *ibid.*, p. 307.

10 *Reserve Bank of India Bulletin*, Vol. III, No. 2, February, 1949, p. 89.

extreme attachment of the debtor to his land and his unwillingness to come to a settlement with his creditors when it involves transfer of land; unwillingness of creditors to conciliate debts due to them where they hold decrees of foreclosure or lands under interminable usufructuary mortgage; over-indebtedness of the debtors; debtors owing heavy arrears of rent or revenue; debts supported by defective documents, etc. Corruption and inefficiency of the Boards have also been detected in some cases. It is thus reported of Bengal that these Boards consisted mostly of persons whose literary attainments went little beyond ability to sign their names. It is too much to expect such members to solve "intricate questions of law . . . that often tax the intelligence and baffle the judgement of experienced judges and lawyers."[11] Lack of a sufficiently large number of Boards has often, as in Bengal, led to a sudden increase in proceedings against debtors in those areas where the Boards were not instituted. As a result of these factors the scope of conciliation has been limited.

COMPULSORY SCALING DOWN OF DEBTS

The scope of amicable settlement being limited, relief was further sought to be given to the agriculturists through compulsory reduction in the claims of the creditors. Madras was the first Province to give such ready relief to debtors by passing the Madras Agriculturist Relief Act of 1938. Firstly, the legislation prohibited the creditor from recovering in the aggregate more than twice the original loan; where repayments were less than twice the sum borrowed, only the balance was to be paid. All arrears of interest outstanding on 1st October, 1937, on debts incurred before 1st October, 1932, were cancelled and only the principal was deemed payable. Interest on debts incurred on or after 1st October, 1932, could not exceed 5 per cent till 31st October, 1937, whereas interest on all decrees from the latter date was laid down at 6¼ per cent. Tenants were also given relief by wiping out all arrears of rent except those of the two years preceding the Act, provided these latter were paid by September, 1939. Sales of movable or immovable property could be set aside if made in execution of a decree after 1st October, 1937. In Madhya Pradesh, the Debt Relief Act passed in

11 See K. G. Sivaswamy: *op. cit.*, p. 302.

1939 replaced Debt Conciliation Boards by Debt Relief Courts which were authorised to give graded relief to the debtors in respect of their dues, on the basis of fall in prices since the depression. The principal of debts prior to 31st December, 1925, was to be reduced by 30 per cent, of those incurred between that date and 31st December, 1929, by 20 per cent while those between the last date and 31st December, 1931, by 15 per cent. Debts incurred subsequently were not provided relief. The payment of interest could not exceed 6 per cent simple interest on secured loans and 9 per cent on unsecured loans while the payment of compound interest was limited to 4½ per cent with yearly rests.

The U.P. Agriculturists Debt Relief Act of 1939 laid down that loans taken before the Act came into force should carry a certain scheduled rate of interest from 1st January, 1930, till such date as might be fixed by the local Government. Any judgment-debtor whose decree was not executed could apply for revision. The excess paid under interest was to be credited to the principal. Interest on subsequent decrees was not to exceed the rate at which the local Government borrowed. The Act authorised the courts to award by way of the principal amount due, a sum which would not exceed twice the amount of the principal minus all the payments received by the creditor in the past in respect of the said transactions. The landed property of protected tenants could not be sold away to realise their dues, but creditors could take possession of it as a usufructuary mortgage.[12]

The Bombay Agricultural Debtors Relief Act, 1939, was put into force in 1941 as an experimental measure in a few talukas in the three divisions of the former Province. It provided that every debt, in respect of which no application for settlement was made within one year from the date on which a Board was established, would be deemed to have been duly discharged. The specially constituted Debt Adjustment Boards working under the control of the civil courts were authorised to compel the creditors to accept scaled down debts. They also settled the subsequent arrangements for the repayment of the adjusted amount in instalments convenient to the debtor. As in Uttar Pradesh and Madhya

12 Re-enacted as the U.P. Debt Redemption Act, 1948; the U.P. Regulation of Agricultural Credit Act, 1940, re-enacted in 1948.

Pradesh, the Act made provision for graded relief. The account regarding the principal was to be separate from that of interest, accumulated interest not being allowed to be debited to the account of the principal. The rule of *Damdupat* was also adopted for reducing the debt. A procedure was laid down for the Boards to estimate the debtor's ability to repay his dues and the principal could be scaled down to 80 per cent of this repaying capacity. Where creditors agreed to scale down the total claims to 50 per cent of the assets of the debtor, they could be paid down the amounts in the form of bonds issued to them by the State Land Mortgage Bank. Otherwise, they could recover the scaled down debts in instalments not exceeding 25 in number. Where the assets of a debtor were found inadequate for repayment, the Board could declare him an insolvent.[13] In general, the element of compulsion has not always proved to be a better alternative to amicable settlement.

OTHER MEASURES

In addition to debt relief, attention is given to the necessity of exempting a portion of the debtor's property from attachment and sale and the protection of the debtor from intimidation and molestation by the creditor for the recovery of his dues. One aspect of this problem of indebtedness, however, that remains to be urgently tackled is that of insolvent agricultural debtors. Where ancestral debts have been for years disabling the farmer even from profitably continuing his occupation, debt conciliation is an inadequate relief. While in Europe restrictions are placed on the recovery of ancestral debts to the extent of the property inherited, there is no corresponding measure passed in India for the relief of the debtors. To such cultivators, who are beyond any hope of being rehabilitated, insolvency provisions are the only remedy. The case for a simple Insolvency Act for such farmers has found support from several Commissions and Committees in the past—including the Royal Commission on Agriculture, the Civil Justice Committee and the Indian Central Banking Enquiry Committee. "Just as creditors have the right to insist that all the debtors' assets should be impounded and

13 Re-enacted as the Bombay Money-Lenders' Act, 1946, and amended in 1948, 1949 and 1951.

applied towards the payment of the debts, so also the debtor who has given up all his assets should have the clear right to be allowed to earn his living if he can and to be free to make a new start in life."[14]

But as the Insolvency Act of 1920 was intended only for debtors whose debts amounted to more than Rs. 500 and as the courts also generally disallowed the benefit of the Act to land holders whose rights were protected from sale in execution, it was not very helpful to cultivators. The Royal Commission on Agriculture had, therefore, recommended amendment of the Insolvency Act enabling the debtors whose debts were less than Rs. 500 to have recourse to this Act. This recommendation was given effect to by the Governments of some States. In Bengal, insolvency provisions were embodied in the Agricultural Debtors' Act of 1936.[15] In other States which did not adopt similar provisions, the creditors failed to get expeditiously the maximum repayments possible while the debtors, weighed down by past debts, were unable to make a new start in life.

A simple rural Insolvency Act enabling the debtor to surrender all his assets to the creditors excepting a subsistence holding to earn his living would meet the situation, if, indeed, the debtor had a subsistence holding to start with. There is no reason to fear that such a provision would bring in a wholesale resort to insolvency. Unless such help is given to the large number of hopelessly insolvent debtors in rural areas, the other alternative is, as the Royal Commission on Agriculture observed, "to witness a continuation of a system under which innumerable people are born in debt, live in debt and die in debt, passing on their burden to those that follow."

LIMITATIONS OF DEBT LEGISLATION

The main provisions of the legislative enactments in the States comprise (1) the licensing and registration of moneylenders, (2) maintenance of accounts in the prescribed forms, (3) furnishing of receipts and periodical statement of accounts to debtors,

14 Report of the Royal Commission on Agriculture in India, Government of India (1928), p. 441.

15 Re-enacted as the Bengal Moneylender's Act, 1940.

(4) fixing of maximum rates of interest, (5) protection of debtors from molestation and intimidation and (6) penalties for violation of the provisons. The Acts are neither equally comprehensive nor uniform in scope. In Madras, Assam and Coorg there were no provisions for either registration or licensing. The Punjab Act excluded protection in the case of substantial mortgage or sale of immovable properties. The Bengal Act excluded all commercial loans. The Madras Act excluded advances made by the landlord to his tenant, by a lessor to his lessee or by one person in cultivation or co-sharer to another. The Orissa Act did not exclude the loans advanced by the scheduled or commercial banks, but where the capital advanced did not exceed Rs. 1,000, the transaction was not considered as moneylending for the purposes of the Act.

Effects of Debt Legislation

It now remains to consider whether the legislation for debt relief and control of moneylending has adequately solved the problem of rural indebtedness. There is no doubt that one of the most significant events of the depression, in this context, was the enactment in a large number of States of debt relief legislation. But the data, however meagre, on the working of the various Acts in the post-depression period until the beginning of World War II show that in practically none of the States did such legislation succeed in making any noticeable impression on the general level of indebtedness. The immediate effect of these measures had been a contraction of credit. The latter was also partly due to the economic depression which affected the moneylending profession (by freezing the assets of those who were both agriculturists and moneylenders) in areas where such legislation was in force. The moneylenders discontinued lending except to old and trusted clients and restricted their loans to a minimum.[16]

In most of the States the main drawback of these relief measures was that the State did not come to the help of the farmer in repaying his dues to the creditor. It is mainly for this

16 Statutory Report of the Agricultural Credit Department, Reserve Bank of India (1937), Para 11.

reason that many debtors became defaulters even in respect of their scaled down debts while in some States like the Punjab, many a cultivator refused to repay his debts to co-operative societies and the *takavi* dues to governments. While it is not denied that some defaults in so far as they were wilful reflect the demoralising effects of the agrarian relief legislation, it is equally true that the major cause of default is the debtors' inability to pay. The measures therefore cannot be said to have had no value at all. In a number of cases they did succeed in achieving what was probably the main objective, *i.e.*, to give the agriculturists some breathing time to enable them to settle claims made upon them by their creditors. Since the proceedings against the cultivators who came under this Act were stayed until disposal, the overall effect of the legislation was to restrain the creditors from taking out suits against debtors, though it must be said that the Act did not bring under its purview a large section of the agricultural population. However, apart from this, the effect of these measures on the level of indebtedness in the various States was generally unimpressive.

On principle, it is recognised that debtors should repay all legitimate dues to the fullest extent. Where it is impossible for the debtor to do so, he may be assisted by Government. In the former Princely State of Bhavnagar, for example, the Government based its scheme of debt redemption on the principle that the maximum amount annually repayable by an agriculturist debtor should not exceed three times the annual assessment payable by him. The State, thereafter, undertook to help the debtors to repay their dues. The total amount to be advanced by the State for this purpose in respect of each village, however, was not to exceed one-fourth of the nominal arrears outstanding in the books of accounts of the moneylender. This advance was recovered from the agriculturist at 4 per cent per annum along with the annual assessment. To save them from again falling into debt, the Government undertook several constructive measures to improve the economic conditions of the farmers. They also granted liberal remissions of arrears of land revenue.

But the dominating factor of the debt situation between 1931-39, *i.e.*, after relief measures were introduced was probably

the inability of the cultivator to repay the principal amounts of old debts in most cases and default even in the repayment of interest charges to a certain extent. This incapacity of the debtor does not seem to have been removed by any direct assistance or indirect financial aid by Government. Actually, though fresh borrowing during the period appeared to have been reduced to a minimum, the level of debt which under the circumstances was broadly a function of accumulated interest on the one hand and forced liquidation of debts by sales and foreclosures on the other, did rise with an expansion in the monetary burden of agricultural debt.

The Rural Credit Survey has come to the conclusion that the law has been powerless against the moneylender. The control sought to be exercised on him by the legislative enactments has had little effect on him or his operations beyond putting him to the necessity of devising a variety of legal camouflage for a whole range of illegality.[17] Even the regulation of the rate of interest on the loans of moneylenders to agriculturist borrowers under the Deccan Agriculturists' Relief Act did not, in practice, have any effect as there was no alternative or supplementary organised arrangement for the supply of credit at reasonable interest or at the ceiling interest fixed by the law to the cultivators. At least such a substitute arrangement would by effective competition compel the moneylender to bring down his interest rates, but such organisations did not exist except for co-operative credit societies in certain areas. The measures taken by Government were relatively minor and almost insignificant in relation to the total credit needs. Even the expansion of the facilities for cash remittances through the establishment of a large number of banking currency chests initiated by the Reserve Bank in conjunction with the programme for the extension of the branches of the State Bank of India, could not by themselves, or in conjunction with other measures adopted by State Governments, help to provide adequate credit as an alternative to that supplied by the moneylenders. It is because of the undiminished demand for credit on the part of the agriculturist population that the moneylender has been enabled to successfully evade the controls

17 All-India Rural Credit Survey, Vol. II—The General Report, *op. cit.*, p. 326.

imposed on him and to continue to supply agricultural credit as extensively and extortionately as ever. The data on rates of interest by themselves are sufficient to indicate the general evasion of legal regulations throughout the country. The borrowings at rates higher than the legal maximum exceeded 60 per cent of the total borrowings from the agencies in Bihar, Orissa, West Bengal, Hyderabad, Madras, Madhya Pradesh and Pepsu.[18]

The main criticism that can be levelled against these laws is that they are inadequate in themselves to tackle the evil of indebtedness. They are at best corrective and not preventive. The moneylender's dealings may be regulated, and debts may be conciliated or scaled down, but they are bound to reappear so long as the occupation of farming itself cannot give the cultivator sufficient means to subsist. With the help of these measures the farmer may recover part of his lost ground but he cannot hold it for long, unless efforts are simultaneously made to rehabilitate agriculture and to transform it from a deficit to a profitable basis, through comprehensive agricultural reforms.

As the Report of the Rural Credit Survey has pointed out, the preponderating participation of the moneylender in agricultural finance and the size of his operation are an index to the size of the effort that will be needed on the part of the State to rectify a chronic maladjustment which is to the disadvantage of rural India. Until other sources of supply, particularly of co-operative credit, are organised, the moneylender is likely to elude the law for regulation and control of his operations.[19]

In the scheme of integrated rural credit recommended by the All-India Rural Credit Survey and accepted by Government, no place has been assigned to the private moneylenders. The Report observes: "it is certainly obvious that the moneylenders can be allotted no part in the scheme, important or significant, notwithstanding their dominance which today is overwhelming... Thus it would be a complete reversal of the policies we have

18 Report of the Committee of Direction, All-India Rural Credit Survey, Vol. I, Part II (Credit Agencies) (1957), p. 702.

19 For a fuller discussion of the problem, see the Report of the Committee of Direction, All-India Rural Credit Survey, Vol. II, *op. cit.*, p. 328 and Chapter 41.

been advocating to give him a position in the co-operative banking structure when the whole object of attempting to develop and strengthen the structure is to provide a positive institutional alternative to the moneylender himself, something which will compete with him, remove him from the forefront and put him in his place." In fact the recommendation goes so far as to provide safeguarding measures for preventing the moneylender from getting into the co-operative society and using it for his benefit. It is also made clear that this recommendation is made not on the ground of any anti-social element in the transactions of the moneylenders but on the ground that the present malpractices of the moneylender are made possible by the absence of strong institutional competition. When such competition is organised it is even hoped that the moneylender's usefulness will predominate over the less useful and more undesirable features of his present dominance. In this light, the Rural Credit Survey Committee recommended that the scheme of control over the moneylender's activities should be more realistic than the prevailing schemes of control in the different States. Only under a proper scheme will the better type of moneylender has a chance to perform his functions without having recourse to the evasion of law. The Report approves of the need for a review of moneylending legislation in different States, on the lines of the scheme of control proposed by the Agricultural Finance Sub-Committee. Among the main proposals in the above scheme it is suggested that the rates of interest prescribed in the different legislative measures should be reviewed and revised in a realistic manner. It is obviously futile to expect the moneylender to charge an interest which is lower than that prescribed as the maximum for co-operative societies and other institutions. There is the need for a proper agency for the enforcement of the provisions of the Acts by providing for the necessary staff under the Registrar of Co-operative Societies.

In regard to the traders who combine moneylending with their other activities, it is suggested that with the development of co-operative marketing societies, and when a network of godowns and warehouses is created, the necessary healthy institutional competition in traders' operations will have evolved which will curb their harmful practices. The trader, like the money-

lender, will fall into a place not within the official scheme itself but in a role supplementary to it providing useful services to the producer. The provision of warehousing and storage facilities would also help the commercial banks to lend substantially on agricultural commodities and create agricultural bills which will be negotiable and which the Reserve Bank can re-discount under Section 17(4)(d) of its Act. Finally, the Report of the Rural Credit Survey visualises a period when by the development of the scheme of integrated rural credit as advocated, the 'rural debentures' of the land mortgage banks, which would be set up as a country-wide feature of credit organisation, would be an effective and attractive means of canalising the savings of the people of means in rural areas, especially big cultivators and also the moneylenders. This will in reality mean that to the extent there is such a diversion of saving, the agriculturist moneylender and the professional moneylender instead of doing their own lending for purposes not necessarily productive and to persons not necessarily prompt in repayment will be lending to an institutional agency which can ensure both productiveness of purpose and promptness of repayment. This is the possible point of contact which the Committee has viewed between the moneylender and the integrated scheme of rural credit.[20]

20 *op. cit.*, p. 485.

CHAPTER XIII

THE ROLE OF CO-OPERATION

POLICY DEVELOPMENTS

Among the institutional agencies which provide finance to agriculturists, as has been pointed out in the previous chapter, co-operatives are the most important. The co-operative movement in India was initiated by the Government of India in 1904 with the main object of freeing agriculturists from the grip of money-lenders and enabling them to secure production credit to the extent required by them at relatively cheap rates of interest. Despite official sponsorship and efforts, and devoted services of non-official co-operators, very little progress was achieved in this direction even after about fifty years of effort and the rural credit system continued to be dominated by private moneylenders, whose activities had a depressing influence on agricultural economy. The need for formulating a long-term policy in regard to the framework of institutional arrangements for rural finance with a view to providing an effective instrument for agricultural development was keenly felt particularly after the attainment of Independence and it was in this context that the Informal Conference on Rural Finance convened in 1951 recommended a detailed investigation of the position relating to rural credit on a national basis. In pursuance of this recommendation, the Reserve Bank of India appointed a Committee of Direction to conduct a comprehensive All-India Rural Credit Survey in August, 1951. The investigations conducted by this Committee revealed, as pointed out in the preceding chapter, that co-operatives supplied only about 3 per cent of the total borrowings of cultivators. The Committee, however, felt that even if the record of the co-operatives in the sphere of agricultural credit emerged as defective in more than one way, the co-operative agency still remained, in many respects, by far the least unsatisfactory channel of credit to the cultivator. They, therefore summed up their approach in the sentence: "Co-operation has failed but Co-operation must succeed." The Committee stressed that the reorganisation of

agricultural credit in India must be based on some form of co-operative association of cultivators within the village itself.

Discussing the causes of past failure of the co-operative movement, the All-India Rural Credit Survey Report[1] stated that the prescriptions for the reorganisation of co-operative credit hitherto made or tried may be described as attempts to rectify internal weaknesses of the credit structure without taking into account the weaknesses of the rural structure as a whole, much less its maladjustment with the external mechanism of urban trade and finance. Most reforms of the co-operative movement, attempted or effected were, therefore, in the nature of inevitably futile attempts to combine the weak against the strong in conditions in which the weak have had no chance. It was stated, therefore, that the co-operative movement must be strengthened in a manner that would be effective against the competition and opposition of private trade and other private interests. This could not be done from the internal sources or reorganisation of the co-operative structure. Thus, the choice before co-operation was indefinitely to continue in various degrees to be unable to help itself or to be helped in order that eventually it may not only help itself but need no other outside help. Such help in the initial stage could come only from the State. The manner of help as hitherto should not be merely administrative, which in fact meant over-administration and under-financing. If co-operation was not to be merely a combination of the weak, what was needed was not merely State guidance and State aid but also State partnership with the co-operatives. While recommending such a comprehensive State participation, the Report emphasized that every precaution should be taken to safeguard the essential character of the institution in which such participation took place and nothing was done which may lead to State interference in its day-to-day working. Following this approach the Report recommended an Integrated Scheme of Rural Credit. The fundamental principles on which the Scheme is based are:[2]

(i) State partnership, including financial partnership, in co-operative rural credit in order that such credit may not only be

1 Report of the Committee of Direction, All-India Rural Credit Survey, Volume II—The General Report, *op. cit.*, p. 376.

2 *ibid.*, p. 378.

expanded and strengthened but expanded and strengthened for the positive purpose of production and for the positive benefit of the rural producer.

(ii) State partnership, including financial partnership, for the benefit of the rural producer, in a programme for the organisation of processing and marketing on a co-operative basis and for the development of storage and warehousing and also in a programme for the organisation on a co-operative basis of such of the other economic activities of the village as are of importance to him as cultivator, agricultural labourer or handicraftsman, such as for instance, farming, irrigation, provision of seed and manure, transport, fisheries, milk supply, dairying, livestock-breeding and cottage industries.

(iii) Designing of the extent and manner of State participation involved in State partnership as to ensure that, while responsiveness to the new policies is effectively created, every precaution is taken to safeguard the essential character of the institution in which such participation takes place and nothing is done such as may lead to State interference in its day-to-day working; recognition, further, so far as co-operative credit and co-operative economic activity are concerned, of the need so as to regulate the extent of State partnership at different levels as (*a*) at the rural base to leave scope for the societies to become fully 'co-operative,' within a measurable period, by the process of themselves replacing the State part of the share capital and (*b*) at the higher levels to retain what may be described as the major partnership of the State until such time, however long, as may be required in the interests of the co-operative organisation at the rural base which, before it develops sufficient strength, and for the purpose of developing such strength, will need, against the competition and opposition of private vested interests, and for various other reasons, a support which is at once powerful, sympathetic, financially adequate and technically competent.

(iv) Training a new type of personnel altogether, which is not only technically qualified, but is also in its sympathies, attitudes and mental equipment rurally biased in order that the new functions devolving on the State by reason of the above may

be discharged both efficiently and for the benefit of the rural population.

(v) Integration of, and the State's financial participation in, an important sector of commercial banking (*viz.*, that which in various degrees is already associated with the State and which, if the banks concerned are made to come together, broadly covers the whole of India) in order that the State-partnered, country-wide banking institution so formed may, among other things, be charged with and carry out the positive duty of endeavouring to do its best to help the development of rural and co-operative banking. It will be expected to discharge this duty by several means open to it including, principally, the effecting of arrangements for the readier and cheaper remittance of money, especially in relation to the relatively undeveloped areas which have been neglected by commercial banks and in which, without such facilities, no development of rural or co-operative banking is possible.

As the co-operative institution at the primary level is the ultimate dispenser of credit to the cultivator, according to the Report, the future line of development of co-operative credit at the village level should be unhesitatingly in the direction of bigger societies covering larger areas. It was recommended, therefore, that primary agricultural credit societies should hereafter be established or reorganised so as to cover according to local conditions, groups of villages with a reasonably large membership and reasonably adequate share capital. As a rule, the area of operation of the society should be such as to provide it with adequate business. Reorganisation of existing societies was to be attempted only where necessary. In regard to fresh registrations of primary agricultural credit societies, the model adopted in regard to size, etc., should be the large size society with limited liability. A large size society would have initially a minimum level of share capital which would be raised in a specified period to an optimum level. The Central co-operative bank would initially contribute to the primary credit society whatever amount was necessary for ensuring that the total share capital was not below the minimum level. For this purpose, the State Government would make the necessary finance available to the State

co-operative bank. Another important aspect of the scheme was a reorientation of co-operative loan policy from property-nexus to production-nexus. The production-oriented loan policy, "the crop loan system," should form the basis for short-term co-operative credit. Under this system, production would be the main purpose of the arrangements for finance; short-term loans would be given on the basis that a crop is anticipated, not primarily that a title exists; the loans would be related in amount to the estimated outlay on raising the crops; and the recoveries would be made, as and when the crop is sold, from the proceeds of the sale. To make these arrangements effective, there would be a close link between the primary agricultural credit societies and marketing societies. A primary society would finance its members on condition that their produce is sold through the marketing society to which it is affiliated. The primary credit society would act as an agent for the sale of produce to the nearest co-operative marketing society, assemble the produce of members, supervise and arrange for the transportation of the produce. In order that the primary credit societies should be run in a businesslike manner, it was recommended that each of them should have, if possible, a paid full time qualified secretary. Although each of the large size society was expected to be viable, in order to reach that stage, it was thought it might take some time. Thus a managerial subsidy for an initial period was considered desirable. Under this scheme supervision of these societies would be invariably treated as the legitimate function of the State and Central co-operative banks.

Another important recommendation of the Report was that there should be progressive organisation, on a co-operative basis, of marketing and processing through the promotion of co-operative institutions of the appropriate type with the needed financial and other assistance from the all-India and State organisations. Credit and marketing were not to be undertaken by the same organisation at any level. For this purpose, constitution of the National Co-operative Development and Warehousing Board and establishment of the All-India Warehousing Corporation and State Warehousing Corporations were recommended. Storage and warehousing should be developed through these State-partnered organisations at the all-India and State levels and, at other levels,

through co-operative institutions of the appropriate type with the needed financial and other assistance from these all-India and State organisations.

A State Bank of India should be set up through the amalgamation of the Imperial Bank of India and certain State-associated banks. This institution, by its programme of branch expansion, should be able to effect a substantial increase, especially in undeveloped areas, of facilities for cheap and ready remittance of money and provide responsive support to the co-operative structure connected with credit and economic activity, especially marketing and processing. For the purpose of meeting the net additional cost involved in opening such branches as may initially be unremunerative and other expenditure on minor purposes in connection with these recommendations, constitution of an 'Integration and Development Fund' was recommended. The Reserve Bank of India and the Central and State Governments were assigned an important role in the creation of an integrated rural credit structure, such participation amounting to certain direct responsibilities in the carrying out of policies and to overall planning, co-operation, etc. For the orderly financing of the programme of development, the Report recommended constitution of the National Agricultural Credit (Long-term Operations) Fund and the National Agricultural Credit (Stabilisation) Fund in the Reserve Bank of India. The Report also recommended the creation of (*a*) the National Co-operative Development Fund and (*b*) the National Warehousing Development Fund, through contributions by the Government of India.

After detailed consideration at various conferences culminating in the State Ministers' Conference held in New Delhi in April, 1955, the Integrated Scheme was approved and accepted as the basis for future development to be incorporated into the Second Five-Year Plan. The general plan which was recommended for adoption was the reorganisation of co-operative structure by State participation in the share capital of co-operative institutions at all levels and the creation of necessary funds and administrative environments for the purpose. The Conference also recommended the initiation of pilot projects embodying the whole inte-

grated scheme of co-operative development in two or three selected areas in a few States.

In order to accelerate the implementation of the scheme relating to the development of marketing, processing and warehousing, Conferences of representatives of State Governments and marketing organisations were convened at Hyderabad in November, 1955 and at Jaipur in February, 1956. At these Conferences, it was suggested that marketing societies should be set up even in advance of large size credit societies, particularly in view of the fact that credit societies in future will be lending in large measure against anticipated crops and such loans would have to be recovered through co-operative marketing societies. A well-defined programme of co-ordinated activity on the part of credit and marketing societies was laid down, according to which the credit society would be responsible for the supply of production loans and would act as a feeder to the marketing society, and the marketing society, in turn, would sell the produce and act as a recovering agent for the credit co-operative. The work of construction of godowns was to be expedited. Recommendations were also made in regard to the provision of services ancillary to marketing. These recommendations formed the basis of the programme for co-operative development in the Second Five-Year Plan which enunciated in more precise terms and in greater detail the role of co-operatives.

However, a shift in policy occurred in 1958, regarding organisation of large size societies as programmed. For, according to a review by the Government of India and the Planning Commission, the organisation of large size societies at least in some States had not proceeded on right lines inasmuch as several of these societies covered extensive areas or were formed by compulsorily amalgamating small credit societies. The Government, therefore, favoured the organisation of small societies. This found expression in the resolution of the National Development Council on co-operative policy passed at its meeting held in New Delhi in November, 1958. The resolution emphasized that "for the development of co-operation as a people's movement, it was essential that co-operatives should be organised on the basis of the village community as the primary unit, and that responsibility

and initiative for social and economic development at the village level should be placed fully on the village co-operative and the village panchayat." The Council urged the State Governments to review their present programmes of co-operative development and formulate fresh programmes to be implemented during the next two years.

For considering the administrative and organisational arrangements required for implementing the resolution of the National Development Council, the Government of India appointed in November, 1958, a working group. The report submitted by the working group in January, 1959 was considered by the Government of India and the National Development Council. Certain decisions were taken on the basis of which the important aspects of the future co-operative policy and the pattern of organisation as envisaged by the Government of India were laid down as under :

(1) The village panchayat and the village co-operative society will be the primary agencies for carrying out the community development programme. While the panchayat is an administrative body, the co-operative society will be essentially a business organisation. There should be the fullest co-ordination between them and an appropriate division of their respective functions.

(2) Co-operative societies should be organised on two patterns, one for general adoption and the other for adoption in special circumstances. Pattern No. 1 envisaged organisation of service co-operatives on the basis of one village but where the villages are too small and the people are agreeable a society may be organised for two or more villages provided the total population covered is about 1000. Pattern No. 2, which was complementary and not an alternative to Pattern No. 1, envisaged organisation of credit unions covering a group of villages besides a non-credit society in each of the villages covered by the union. These latter societies will undertake all other activities except credit.

(3) There should be no State participation in the share capital of village societies. But the State Government, if it considers this necessary, may contribute to the share capital of the credit

unions. No more large size societies should be organised. Assistance in respect of share capital, managerial subsidy, etc., should, however, continue to be available to all large size societies organised before April, 1959.

(4) State Governments should adopt a policy of progressively making facilities for supply of seeds, fertilizers, etc., available only to members of village societies which will serve as an inducement to every villager to join the society in his village.

(5) Credit should be linked up with production programmes on the one hand and, for its recovery, with co-operative marketing on the other. Therefore, the programme of organising and developing marketing and processing societies should be accelerated.

(6) All *taccavi* loans, apart from distress loans, should as far as possible be channelled through co-operative institutions.

Further to this, the Government of India circulated the details of a scheme, to be tried in select areas, for providing credit for agricultural production plans at the village level. The Government of India were to provide funds to State Governments to be advanced by them to State co-operative banks which would pass on the funds through the Central co-operative banks to primary societies to enable the societies to provide credit to those who could not obtain any credit from the co-operatives or obtained it in inadequate volume in relation to their needs for executing a given production programme. This question of the Government providing a supplementary line of credit was considered at the Conference of State Ministers' of Co-operation held in Mysore in 1959. The Conference recommended that the question of providing adequate credit and of State participation in share capital at the primary level, for which there was considerable demand from State Governments, should be referred to an expert committee which was to examine the whole question and make concrete suggestions as to how to expand credit for agricultural purposes.

Accordingly, the Government of India appointed, in September, 1959, a Committee under the Chairmanship of Shri V. L. Mehta. The report of the Committee submitted in May, 1960

was generally accepted by the Government of India. The important features of co-operative policy formulated on the basis of this report were that while as a general rule co-operatives should be organised on the basis of the village community as the primary unit, the number of villages to be covered by a society might be increased, in the interests of viability, where villages are small. This was, however, subject to the condition that the population covered in the villages should not exceed 3000 and that the villages should not be situated at a distance of more than 3 to 4 miles from the headquarter village. The broad test of viability should be the ability of the society to meet its expenses without depending upon financial assi'tance from Government except for a limited period. State assistance in this context, *viz.*, management subsidy. would be given to co-operatives subject to a maximum of Rs. 900 spread over a period of 3 to 5 years. State contribution to share capital of primary agricultural credit societies was to be given, but under certain conditions, the maximum contribution being ordinarily limited to Rs. 5,000. The society should be in a position to provide credit to all cultivators, irrespective of whether they were owners, tenants or lease holders of land. In order to encourage co-operatives to admit all classes of cultivators as members, Government might make certain outright grants to primary credit societies and Central co-operative banks for being credited to a special bad debt reserve fund to cover the risks involved. As a general rule, mortgage security was not to be insisted upon for loans up to Rs. 500. Besides, the Committee's recommendation about liberalisation of the standards for fixing credit limits to State co-operative banks for short-term and medium-term purposes by the Reserve Bank of India was also accepted.

Another major development in the sphere of co-operative credit policy was the enactment of the Banking Laws (Application to Co-operative Societies) Act, in September, 1965. The Act amended the Reserve Bank of India Act, 1934 and the Banking Companies Act, 1949. The Act as applicable to co-operative societies came into force on March 1, 1966 and extended all the provisions of the Reserve Bank of India Act and the Banking Companies Act (except those relating to incorporation, management and liquidation which would continue to vest in the Registrars of Co-operative Societies) to State co-operative banks, Cen-

tral co-operative banks and the more important primary non-agricultural credit societies including, in particular, urban co-operative banks with a paid-up capital and reserves of Rs. 1 lakh or more and the bye-laws of which do not permit the admission of any other co-operative society as members.

The important provisions of the Banking Regulation Act, as applicable to the co-operative banks, are those in regard to maintenance of cash reserves, liquid assets, control on advances, licensing, inspection and issue of directives. Every co-operative bank other than a scheduled State co-operative bank has to maintain a cash reserve of not less than 3 per cent of its total demand and time liabilities either with itself or in current account with the higher financing agencies. In addition, every co-operative bank is required to maintain liquid assets (including a minimum cash reserve of 3 per cent) of not less than 20 per cent (to be raised to 28 per cent subsequently) of its total demand and time liabilities in India for a period of 2 years from the commencement of the Act or for such further period stipulated by the Reserve Bank. Co-operative banks would not, however, experience any difficulty in complying with these requirements because their borrowings from higher financing agencies which constitute a highly significant proportion of their working funds, are excluded from the computation of demand and time liabilities. The State and primary co-operative banks have to obtain a licence from the Reserve Bank to carry on banking business and also for opening of branches. However, the Central co-operative banks will be permitted to open branches in the area of their operations. Further, the Reserve Bank which was so far carrying out inspections of State and Central co-operative banks on an informal and voluntary basis is now statutorily empowered to inspect them and to issue directives to them. The Reserve Bank may inspect primary co-operative banks either directly or cause the inspection of such banks to be made by the officials of the State co-operative banks to which they are affiliated.

In regard to mobilisation of deposits, co-operatives were at a disadvantage as compared to the commercial banks in that the deposits with the latter were covered under the Deposit Insurance Act, 1961. Therefore, the question of extending the deposit insu-

rance scheme to co-operative banks by amending the provisions of the Deposit Insurance Corporation Act was considered by the Central Government in consultation with the State Governments. The implementation of the scheme required amendments to the co-operative laws in force in the States in order to vest statutory powers in the Reserve Bank. Since a majority of State Governments had agreed in this behalf, the Deposit Insurance Corporation (Amendment) Bill was introduced in Parliament on July 17, 1967, to extend the deposit insurance schemes to co-operatives coming under the purview of the Banking Regulation Act.

IMPLEMENTATION AND PROGRESS

The Role of the Reserve Bank of India in Co-operative Credit

Prior to Independence, the role of the Reserve Bank in the sphere of rural credit was mainly confined to examining the lines on which the co-operative movement could be reorganised. The credit made available to State and Central co-operative banks was restricted in the first few years mainly to assisting the State co-operative banks to tide over a temporary shortage of funds, since the Bank acted mainly as the lender of last resort. The post-Independence period saw a radical change in the Reserve Bank's conception of its own role and actual policies and practices with regard to rural credit. The recommendations of the Rural Banking Enquiry Committee (1950) and the Informal Conference of co-operators, economists and others convened by the Bank in 1951 resulted in a liberalisation of the facilities for accommodation to the co-operative institutions. After the publication of the Report of the All-India Rural Credit Survey in 1954, the Reserve Bank was assigned a significant role in not only providing adequate credit at the concessional rate of interest but in building up a strong credit structure in the country.

In respect of short-term agricultural production finance, the responsibility for extension of credit through co-operatives is virtually assumed by the Reserve Bank of India. Under the Reserve Bank of India Act, credit limits are granted against two good signatures by the Bank to State and Central co-operative banks against the security of promissory notes and/or Government gua-

rantee. These State co-operative banks, in turn, finance the Central co-operative banks which in their turn finance the primary credit societies. The short-term finance extended to co-operatives by the Reserve Bank showed a phenomenal rise to about Rs. 261 crores during 1965-66 and Rs. 289 crores during 1966-67 as compared with Rs. 143 crores during 1960-61 and Rs. 12 crores in 1951-52.

TABLE I

SHORT-TERM LOANS FROM THE RESERVE BANK TO STATE CO-OPERATIVE BANKS FOR SEASONAL AGRICULTURAL OPERATIONS AND MARKETING OF CROPS*

(*Rs. in crores*)

Year (July-June)	Amount sanctioned	Amount drawn during the year	Amount outstanding at the end of the year
1951-52	12.4	12.1	6.5
1955-56	29.6	25.6	13.0
1960-61	111.8	142.9	100.9
1965-66	212.7	260.7	143.7
1966-67	257.5	289.3	135.4

* Under Section 17(4)(a), (2)(b) or (4)(c) of the Reserve Bank of India Act.

A substantial part of the above accommodation is provided for production and the remaining for marketing of crops. While development of co-operative marketing is mainly the responsibility of the Union Government, the financing of marketing co-operatives is undertaken by the Reserve Bank. The short-term finance for production and marketing is advanced by the Reserve Bank to State co-operative banks at the concessional rate of interest which is 2 per cent below the Bank rate.

The Reserve Bank has been empowered after the amendment of the Reserve Bank of India Act in 1953 to give medium-term loans to the co-operative sector. For the first few years the total amount of such loans (outstandings) was subjected to a ceiling limit of Rs. 5 crores. In pursuance of the recommendations of the Rural Credit Survey Report, the National Agricultural Credit (Long-term Operations) Fund was constituted in 1956 with an

initial contribution of Rs. 10 crores and an annual recurring contribution of Rs. 5 crores. This was later raised to Rs. 10 crores in 1959-60. In 1960-61, it remained at that level but it was decided to raise it by Rs. 1 crore each in the subsequent years. Accordingly, the Bank's contribution to the fund was Rs. 16 crores in 1966-67. The amount to the credit of the Fund was Rs. 131 crores as on June 30, 1967. Since the creation of this fund, medium-term loans are given by the Bank only from out of the amounts credited to it. The medium-term finance is provided at the concessional rate of 1½ per cent below the Bank rate. Medium-term loans given by the Reserve Bank to State co-operative banks increased from about Rs. 1 crore in 1955-56 to Rs. 9 crores in 1960-61 and further to Rs. 15 crores in 1966-67.

TABLE II

MEDIUM-TERM LOANS FROM THE RESERVE BANK FOR AGRICULTURAL PURPOSES

(*Rs. in crores*)

Year (July-June)	Amount sanctioned	Amount drawn during the year	Amount outstanding as at the end of the year
	Agricultural Credit (Long-term Operations) Fund*		
1955-56	1.4	0.9	1.0
1960-61	4.7	5.7	8.8
1965-66	14.1	7.5	15.0
1966-67	15.5	8.4	15.4
	Agricultural Credit (Stabilisation) Fund†		
1965-66	4.8	4.7	4.7
1966-67	8.8	6.4	8.8

* Under Section 17 (4AA) read with Section 46A(2) (b) of the Reserve Bank of India Act.

† Under Section 17(4AA) read with Section 46B(2) of the Reserve Bank of India Act.

In pursuance of the recommendations of the Rural Credit Survey Committee, the Reserve Bank also set up the Agricultural Credit (Stabilisation) Fund in 1956 with an initial contribution of Rs. 1 crore and an annual contribution of Rs. 1 crore

each. Loans from out of this fund are granted to enable co-operatives to convert a part of their short-term loans into medium-term loans when their members are unable to repay the short-term loans availed by them on account of widespread failure of crops caused by natural calamities. In view of the widespread scarcity conditions and the consequent likely demand on it, the Reserve Bank contributed Rs. 6 crores to the fund during 1965-66 and increased the contribution further to Rs. 9 crores in 1966-67. The total amount to the credit of the fund as on June 30, 1967 was Rs. 25 crores. The fund was drawn upon for the first time in 1965-66, when stabilisation loans sanctioned from out of it amounted to about Rs. 5 crores. In the succeeding year the loans from out of the fund increased to Rs. 9 crores.

Long-term financial assistance is also made available by the Reserve Bank to the co-operative land mortgage banks which are purveyors of long-term credit, *i.e.*, generally for a duration of 10 years or more. The central land mortgage banks generally float debentures which are mainly of two types, *viz.*, ordinary debentures and rural debentures. In regard to the former, the Bank has been subscribing up to 20 per cent of the total issue or the shortfall in subscription, whichever is less. But from September, 1965, the Bank's contribution was reduced to a maximum of 10 per cent of the issue or the shortfall in public subscription whichever is less.

The support of the Reserve Bank to debentures floated by land mortgage banks underwent another significant change in 1966, when the Bank co-ordinated the subscriptions to debentures made by itself as also of other public sector institutions, *viz.*, the Life Insurance Corporation of India and the State Bank of India. This was facilitated by prior discussions on the debenture programme about the total amounts for which debentures are to be floated, and the extent of support that would be forthcoming from each one of these public sector institutions is indicated in advance. Thus out of a total floatation of ordinary debentures estimated at Rs. 35.75 crores, the Life Insurance Corporation agreed to contribute Rs. 10 crores, the State Bank Rs. 4 crores and the Reserve Bank Rs. 4.70 crores. Further,

these public sector institutions also decided to provide larger support to debenture issues of less developed Central land mortgage banks. For this purpose, these banks, depending upon the stage of their development, were grouped into three categories and it was agreed to contribute 60 per cent of the debenture programme of the least developed among them. The highly developed would get support to the extent of 50 per cent and the medium group 55 per cent. Further, with a view to spreading out the issue of debentures over the year, it was decided to issue debentures in two periods, *viz.*, April-May, 1966 and September, 1966—March, 1967. The banks were advised to float debentures more than once during each period to minimise the need for interim accommodation. The amount for which banks could float debentures during each period together with the assured support that they can expect from the public sector institutions was also indicated to them. The Reserve Bank's contribution would be to the extent of the shortfall in public subscriptions or the share agreed to, whichever is less, but any unavailed part of agreed contribution in a particular series would be made available for contribution to the next series within the period, provided the total did not exceed the share fixed for the year.

TABLE III

RESERVE BANK'S SUBSCRIPTION TO THE DEBENTURES OF LAND MORTGAGE BANKS

(*Rs. in lakhs*)

Year (July-June)	Rural debentures of land mortgage banks		Ordinary debentures of land mortgage banks	
	Purchases	Outstandings	Purchases	Outstandings
1951-52	--	—	13	43
1955-56	---	--	10	61
1960-61	67	1,26	23	86
1965-66	1,70	5,79	4,08	17,60
1966-67	92	7,14	3,47	21,02

No restriction was placed on the amount that the banks could raise by floating ordinary debentures if they were confident of making the floatation a success without additional support from the public sector institutions. In the case of rural debentures which are intended for issuing long-term loans to agriculturists by mobilising savings, mostly in rural areas, the Bank subscribes

to the extent of 8/15 of the series at a uniform rate of interest of 4 per cent per annum as against 5 per cent per annum on the remaining 7/15 subscribed by individual rural investors. More recently, the Bank has also agreed to subscribe as a measure of support on an experimental basis to special development debentures issued by the Central land mortgage banks for financing development schemes involving huge financial outlays and longer gestation periods.

In order to place the agricultural credit system of the country on a more rational basis and to strengthen the financial position of credit co-operatives, the Reserve Bank has been taking several measures such as advancing of loans to State Governments to participate in the share capital of co-operatives and assisting the State Governments in the rehabilitation of the co-operative movement. The outstanding problems relating to co-operative movement in respect of each State are kept under constant review by the Bank and are also discussed at the meetings of the Standing Advisory Committee on Rural and Co-operative Credit and at special meetings with the representatives of the Co-operative Department and the co-operative institutions of each State.

The accommodation provided by the Reserve Bank to State Governments for contribution to the share capital of various co-operative credit institutions increased from Rs. 1.6 crores in 1956-57 to Rs. 28.2 crores in 1966-67. These funds are given out of the National Agricultural Credit (Long-term Operations) Fund.

TABLE IV

LONG-TERM LOANS FROM THE RESERVE BANK TO STATE GOVERNMENTS FOR CONTRIBUTION TO THE SHARE CAPITAL OF CO-OPERATIVE CREDIT SOCIETIES

(*Rs. in crores*)

Year (April-March)	Amount drawn during the year	Amount outstanding at the end of the year
1956-57	1.6	1.6
1960-61	2.7	20.0
1965-66	2.6	29.4
1966-67	2.3	28.2

Source: Reports on Currency and Finance for the respective years, Reserve Bank of India, Bombay.

The Reserve Bank plays an important role in assisting co-operative sugar factories. The Bank provides accommodation to State co-operative banks for financing working capital requirements of co-operative sugar factories. Drawals for this purpose amounted to about Rs. 15 crores during 1962-63. Since 1963-64 (April-March), the State co-operative banks did not draw any amount for this purpose. The Bank also assists State co-operative banks in financing the purchase by small and medium cultivators of the shares in co-operative sugar factories, cotton ginning and pressing units, groundnut oil mills and rice mills. The total amount outstanding in respect of such loans stood at Rs. 5 lakhs in 1966-67.

Another sphere of agricultural production in which the Reserve Bank has been actively associated is the Intensive Agricultural District Programme, popularly known as the Package Programme. Under the programme, an intensive effort is being made to approach farmers through co-operatives and panchayats with a view to promoting the adoption of a minimum combination of improved practices by making available credit, seeds, manures, etc. In this connection, the Reserve Bank has endeavoured to keep in view three main objectives, namely, (i) strengthening the financial position and operational efficiency of the co-operative credit structure at the primary and district levels, (ii) rationalisation of the loan policy and procedures of central banks to fit in with production-based credit programme and (iii) making co-operatives the most active participants in the agricultural improvement programme. For financing the scheme, the Reserve Bank grants credit limits to State co-operative banks at 2 per cent below the Bank rate.

A Working Group was appointed by the Government of India in 1964 to study the working of co-operatives in the I.A.D.P. districts. The Group which submitted its report in March, 1966 observed that steps were being taken to liberalise credit policies in the I.A.D.P. districts to facilitate smooth flow of credit for intensive production programmes and recommended, *inter alia*, early completion of the reorganisation of the primary credit structure, implementation of the programme of intensive development of marketing and its linking with credit and strengthening of the

TABLE V

RESERVE BANK CREDIT TO CO-OPERATIVES

(Rs. in lakhs)

Purpose	Amount outstanding at the end of March			
	1964	1965	1966	1967
A. Loans to State Co-operative Banks				
Short-term				
(i) Seasonal agricultural operations and marketing of crops (at 2 per cent below Bank rate) ...	120,49	131,32	144,72	149,15
(ii) Production and marketing of handloom products (at 1½ per cent below Bank rate) ...	4,87	4,94	5,57	5,02
(iii) Purchase and sale of yarn (at Bank rate) ...	79	73	39	24
(iv) Meeting working capital requirements of co-operative sugar factories (at Bank rate) ...	—	—	—	—
(v) General banking purposes (at Bank rate) ...	70	58	—	59
Medium-term				
(i) Agricultural purposes (at 1½ per cent below Bank rate)	8,64	11,05	11,65	12,21
(ii) Financing agriculturists for purchase of shares in co-operative sugar factories (at Bank rate) ...	10	5	—	5
(iii) Conversion of short-term loans into medium-term loans in areas affected by drought (at 1½ per cent below Bank rate) ...	—	—	—	3,42
B. Loans to State Governments for contribution to share capital of co-operative credit institutions* ...	28,32	29,88	29,41	28,21
C. Investments in debentures				
(i) Rural debentures ...	3,42	4,28	5,29	6,92
(ii) Ordinary debentures	6,16	10.97	15,45	19,76
(iii) Special debentures ...	18	18	19	20

* Rate of interest charged to State Governments in respect of these loans is nil for the first two years, 2 per cent for the next 3 years, 2½ per cent for the next 4 years, and 3 per cent during the next 3 years.

Source: Report on Currency and Finance for the years 1963-64, 1965-66 and 1966-67, Reserve Bank of India.

dairy and fishermen's societies to help the weaker sections of the community to improve their economic position. The State Governments were requested to implement the recommendations of the Group.

A new programme called the "High-Yielding Varieties Programme" was launched in 1965-66 for increasing production of foodgrains through the use of hybrid varieties of seeds, which are responsive to high doses of fertilizers. For meeting the production credit requirements of members of co-operative credit societies participating in the High-Yielding Varieties Programme, the Reserve Bank sanctioned special credit limits in addition to normal limits to the concerned co-operative banks for financing the programme at the concessional rate of 2 per cent below the Bank rate. In addition, the Reserve Bank also agreed to relax during 1966-67, certain eligibility conditions for borrowings by the co-operative banks for financing this programme.

In addition, the Reserve Bank also extends short-term concessional finance to handloom co-operatives at 1½ per cent below the Bank rate. It also provides short-term finance for purchase and sale of yarn to handloom co-operatives at Bank rate. Further, the Reserve Bank gives at the Bank rate credit to co-operatives for general banking purposes. The total amount outstanding at the end of March, 1967 in respect of various types of credit extended by the Bank to co-operatives was about Rs. 226 crores.

To sum up, the Reserve Bank has undertaken the responsibility for not only extending short-term production and marketing finance to agriculturists through co-operatives but also for meeting to the extent possible, the need of agriculturists for medium-term and long-term production finance which have increased in the context of various schemes for raising agricultural productivity as also the credit requirements for meeting expenditure connected with production of handloom cloth in rural areas.

The State Bank of India and Rural Credit

In pursuance of the recommendations of the Rural Credit Survey Report, the State Bank of India was established on July 1,

1955 by the transfer to it of the assets and liabilities of the Imperial Bank of India. The main objective of establishing the State Bank of India was the "creation of one strong, integrated, State-sponsored, State-partnered commercial banking institution with an effective machinery of branches spread over the whole country, which by further expansion (including further, but minor amalgamation where necessary) can be put in a position to take over cash work from non-banking treasuries and sub-treasuries, provide vastly extended remittance facilities for co-operative and other banks, thus stimulating the further establishment of such banks, and generally, in their loan operations in so far as they have a bearing on rural credit, follow a policy which, while not deviating from the canons of sound business, will be in effective consonance with national policies as expressed through the Central Government and the Reserve Bank."[3] More specifically, in regard to rural credit it was further envisaged that the State Bank of India would endeavour to be responsive to the needs of co-operative institutions connected with credit and especially marketing and processing and that its branch expansion would be co-ordinated, and wherever possible positively associated, with the development of co-operative credit from the point of view specially of the provision of cheap remittance facilities.

As regards branch expansion programme, the State Bank of India Act, 1955 provided for opening of not less than 400 branches within a period of five years beginning from July 1, 1955. This statutory obligation was fulfilled within the specified time limit and in fact the Bank opened 416 branches by end of June, 1960. The second branch expansion programme of the Bank and its Subsidiaries covering the period 1960-65 provided for opening of 165 new branches by the Bank and 155 by the Subsidiaries. In addition to this programme, it was later decided to open 319 branches within a period of 5 years from January 1, 1964. At the close of 1967, the Bank and its Subsidiaries had 2,220 offices in India. Of the total offices of the State Bank and its Subsidiaries in India, about 58 per cent are in semi-urban and rural areas with population below 25,000. The rapid extension of branches covering particularly the semi-urban and

3 All-India Rural Credit Survey, Vol. II—The General Report, *op. cit.*, p. 404.

rural areas has enabled the Bank and its Subsidiaries to provide cheaper remittance facilities in these areas and thereby assist the development of co-operative credit.

In the sphere of rural credit, the Bank provides direct finance to marketing and processing co-operatives in areas where there is little or no near prospect of the Central co-operative banks being able to provide prompt and adequate finance at reasonable rates of interest to these societies. Where the Central co-operative banks are in a position to finance these societies, the Bank finances only those societies which seek the assistance of the Bank with the consent of the Central financing agencies and the Registrar of Co-operative Societies so that the basic relationship between the Central co-operative banks and the co-operative societies is not disturbed. The Bank generally grants advances against pledge and repledge of agricultural commodities for meeting the working capital requirements of marketing and processing co-operatives. In suitable cases, clean advances for limited amounts are also granted. In addition, the Bank grants medium-term loans for periods ranging up to 7 years to processing co-operatives and industrial co-operatives which already have borrowing arrangements with it for their requirements of working capital and wish to obtain finance for purposes of expansion, modernisation, etc.

Among processing co-operatives, co-operative sugar factories are offered certain special facilities. These include provision of interim accommodation by way of clean loans on the guarantee of the concerned State Government pending the disbursement of loans granted to them by the Industrial Finance Corporation, granting of advances against pledge of sugar stocks and readily saleable stores, provision of clean credit facilities for limited amounts for meeting their working capital requirements and establishing letters of credit and, where necessary, deferred payment guarantees for covering the import of capital goods and machinery on the security of the general assets of the factory and/or the guarantee of the respective State Governments.

The Bank has also been actively associated with the warehousing development scheme and has subscribed to the share

capital of the Central Warehousing Corporation to the fullest extent (*i.e.*, Rs. 1 crore) provided for in the Agricultural Produce (Development and Warehousing) Corporations Act, 1956. While implementing its branch expansion programme, the Bank has also been endeavouring to co-ordinate it with the warehousing scheme. It also took initiative in evolving appropriate procedure for granting advances by banks against the security of warehouse receipts. It offers a slightly lower rate on advances against the security of warehouse receipts to co-operative banks and societies. Outstanding advances granted by the Bank against the security of warehouse receipts amounted to Rs. 210 lakhs at the end of March, 1967.

It has also been assisting the development of land mortgage banking in the country by providing financial assistance to these banks through (1) subscription to the debentures issued by co-operative central land mortgage banks, (2) granting advances on the security of such debentures with a view to improving the marketability and popularity of these debentures in the money market and (3) provision of interim financial accommodation to co-operative central land mortgage banks against Government guarantee in order to help them carry on their normal loan business pending the raising of funds through floatations of debentures.

The Bank grants, though on a relatively limited scale, advances to State and Central co-operative banks against authorised Government securities and debentures of co-operative central land mortgage banks at a concessional rate of ½ per cent below the Bank's Advance Rate. The Bank also affords other general facilities such as liberalised and extended remittance facilities, etc. Industrial co-operatives are granted accommodation on the pledge of acceptable raw materials and finished goods and clean accommodation on the guarantee of State Governments, apex, central or industrial co-operative banks. It has also decided recently to grant advances to co-operative wholesale stores against the pledge of stocks.

Outstandings of the financial assistance to all types of co-operative institutions aggregated Rs. 10.1 crores at the end of December, 1967. The marketing and processing societies, how-

TABLE VI

FINANCIAL ASSISTANCE PROVIDED BY THE STATE BANK OF INDIA TO CO-OPERATIVE INSTITUTIONS AS ON DECEMBER 31, 1967

(*Rs. in crores*)

Type of institution	Amount outstanding
1. Marketing and processing societies	0.3
2. Co-operative sugar factories	2.2
3. Co-operative banks	5.3
4. Co-operative central land mortgage banks	1.1
5. Industrial co-operatives	0.6
6. Other co-operative institutions	0.6
Total	10.1

Source: Annual Report of the State Bank of India, 1967.

ever, accounted for a very small proportion of the total credit provided by the State Bank of India. Some of the factors which hamper progress in financing marketing and processing co-operatives are related to (i) deficiencies in the co-operative marketing sector such as lack of marketing societies which can be financed on the basis of the soundness of their financial position, (ii) lack of suitable godowns, (iii) procedural delay relating to repledge and in releasing goods from godowns located at some distance from the office of the State Bank and (iv) legal difficulties such as the absence of statutory provision for the registration of a charge against the assets of a society on the lines of the provision for registration of charges against the assets of limited companies under the Companies Act.

Apart from opening of branches, provision of the ordinary banking services and the mobilisation of savings through depositors' account in rural areas, the Bank made available large volume of finance for the procurement of foodgrains as well as other agricultural produce. In the sphere of rural credit, marketing and processing credit, there was a gradual increase in contribution made by the Bank. Recently, the Bank has approved a scheme of Rural Pilot Centres with a view to assisting in the provision of credit for production, agricultural and industrial, in

rural areas. It was proposed to open 50 to 70 centres distributed over the whole country. In addition to the usual items of banking services and mobilisation of savings, such centres will seek to fill in, on a pilot basis, the gaps and inadequacies, if any, in the existing rural credit institutions. The financing arrangements will, of course, be co-ordinated with the programme of reorganisation of co-operative credit and the operations of co-operative banks and societies in the areas to be covered.

Warehousing Development

An important aspect of the integrated scheme of rural credit and hence of co-operative development plans, relates to the promotion of warehousing facilities and rural economic activity, *e.g.*, marketing and processing, organised on a co-operative basis. An account of warehousing development is given in the next chapter.

STRUCTURE OF AND TRENDS IN CO-OPERATIVE CREDIT

The short and medium-term co-operative credit structure, as it has evolved in our country, is federal in character, consisting of three tiers, *viz.*, the State co-operative banks at the State level, the Central co-operative banks at the district level and primary co-operative credit societies at the village level. Together, these institutions are expected to constitute an integrated system for mobilising resources and be an effective means of supplying credit. The long-term credit structure consists of two tiers only, *viz.*, central land mortgage banks at the State level and primary land mortgage banks at the district level. Some important features of their structure, functions and role in providing credit are discussed in the following paragraphs.

State Co-operative Banks

The constitution of a co-operative banking institution at the apex level was considered essential as early as in 1915. The Maclagan Committee emphasized the need for having an apex bank in each major Province to co-ordinate and regulate the working of Central co-operative banks. The apex bank at the State level operates as a balancing centre for the resources of the movement in the entire State. At the top of the federal structure,

it derives its strength from its affiliated institutions and gives, in return, the strength earned as a result of its contacts with the monetary structure of the country. It is its federal character which ensures that it functions in such a manner that all felt needs are fairly met and at the same time its financial soundness is not jeopardised by careless lending, poor recoveries, etc. The apex bank provides the link between the Reserve Bank of India and the money market on the one hand and the entire co-operative credit structure on the other. It acts as the custodian of the surplus resources and the reserves of the Central co-operative banks and supplements them by attracting sizable deposits and by obtaining loans from the Reserve Bank of India. Under the scheme of co-operative agricultural credit developed in the country, the State co-operative bank has been considered such a vital link that it has been given a status comparable to that of a scheduled bank and, for certain purposes, the central financing agencies have been treated as its branches. The fact that the apex and central banks are different legal entities, though closely inter-related, is a factor of protection to an outside agency which provides funds to the system in that there is a cushion and guarantee in the shape of resources and the supervising machinery at both the apex and Central co-operative banks. The State co-operative bank, therefore, occupies a key position in the entire structure of short-term and medium-term co-operative credit.

There were 22 State co-operative banks functioning in all States and Union Territories at the end of 1965-66. The total paid-up share capital of these banks was Rs. 28.82 crores as on June 30, 1966 against Rs. 18.24 crores as on June 30, 1961 and only Rs. 1.90 crores as on June 30, 1952. Thus between the years 1951-52 and 1965-66 there was a more than fifteen-fold increase in the paid-up share capital of the State co-operative banks. With the initiation of the Integrated Scheme of Rural Credit, the State Governments started contributing to the share capital of co-operative banks, although in one State, *viz.*, the pre-reorganised Bombay, this policy was adopted as early as in 1949. The amount of State contribution to share capital is available since 1955-56 and the available data indicate that the State contribution to share capital increased from Rs. 1.88 crores in 1955-56 to Rs. 6.46 crores in 1960-61 and further to Rs. 9.86

TABLE VII

WORKING CAPITAL OF STATE CO-OPERATIVE BANKS

(*Rs in crores*)

Item	As at the end of June							
	1952		1956		1961		1966	
	Amount	Percentage to working capital	Amount	Percentage to working capital	Amount	Percentage to working capital	Amount	Percentage to working capital
1. Working capital	36.72	100.0	63.34	100.0	221.65	100.0	389.98	100.0
2. Owned funds	4.26	11.6	7.65	12.1	24.00	10.8	44.95	11.5
3. Deposits	21.18	57.7	36.67	57.9	72.33	32.6	146.51	37.6
4. Borrowings from								
(*a*) Government	1.81	4.9	4.70	7.4	6.00	2.7	20.30	5.2
(*b*) Reserve Bank	6.85	18.7	14.07	22.2	113.82	51.4	166.48	42.7
(*c*) Other sources*	2.59	7.1	0.25	0.4	5.50	2.5	11.74	3.0

* Includes cash credit and overdrafts.

Source: Statistical Statements Relating to the Co-operative Movement in India.

crores in 1965-66. The reserves also increased substantially from Rs. 2.36 crores as on June 30, 1952 to Rs. 16.13 crores as on June 30, 1966. Between 1951-52 and 1965-66, the increase in the deposits was of the order of Rs. 125 crores while borrowings increased by as much as Rs. 187 crores. The working capital (total of paid-up share capital, reserves, deposits and other borrowings) rose steadily from Rs. 36.72 crores in 1951-52 to Rs. 63.34 crores in 1955-56; thereafter it showed a sharp and steep rise to Rs. 221.65 crores in 1960-61 and further to Rs. 389.98 crores in 1965-66 as may be seen from Table VII.

Although in absolute amounts there has been an increase in each of constituent items of the working capital during the period 1952 to 1966, the proportion of owned funds (*i.e.*, paid-up share capital and reserve funds) to working capital was steady around 11 per cent. There was also a gradual and steady rise in deposits. In terms of proportion to working capital, other borrowings increased from about 31 per cent in 1952 and 1956 to about 56 per cent in 1961 and stood at 51 per cent in 1966. Deposits as a percentage of working capital declined from 58 per cent in 1952 to 33 per cent in 1961 and increased to 38 per cent in 1966. Borrowings from Reserve Bank has become a major source of borrowing constituting 43 per cent of the working capital in 1965-66 as against only 19 per cent in 1951-52. The loans outstanding increased from Rs. 20.01 crores in 1952 to Rs. 307.93 crores in 1966 (Table VIII). Though the rise was moderate till 1955-56, it was more marked subsequently, being about eight times the 1955-56 level in 1965-66.

TABLE VIII

LOANS OUTSTANDING OF STATE CO-OPERATIVE BANKS

(*Rs. in lakhs*)

Item	As at the end of June			
	1952	1956	1961	1966
1. Co-operatives	18,18	32,14	162,80	301,92
	(91)	(92)	(98)	(98)
2. Individuals and others	1,83	2,63	3,89	6,02
	(9)	(8)	(2)	(2)
Total	20,01	34,77	166,69	307,93
Of which overdue	3,22	3,70	6,97	9,34
	(16)	(11)	(4)	(3)

Note: Figures in brackets indicate percentages to total.
Source: Statistical Statements Relating to the Co-operative Movement in India.

A feature of the advances portfolio of these banks was a decline in the proportion of outstanding loans held by individuals and others from 9 per cent in 1951-52 to 2 per cent in 1961-62 and in 1965-66. The amount of overdues showed an increase from Rs. 3.22 crores as on June 30, 1952 to Rs. 6.97 crores as on June 30, 1961 and further to Rs. 9.34 crores by June 30, 1966, though in terms of percentage to outstandings there was a fall from 16 per cent to 3 per cent between 1952 and 1966.

Central Co-operative Banks

The position of Central co-operative banks is of crucial importance in the co-operative credit structure. They form an important link between the State co-operative bank at the apex and the primary agricultural credit societies at the base. The Maclagan Committee suggested that the term "central bank" should be applied to all local financing institutions directly financing the primary societies, "within an area sufficiently limited to allow them to exercise also the duties of supervision and control over these societies." The Standing Advisory Committee on Agricultural Credit constituted by the Reserve Bank recommended that as a general proposition, there should be one Central co-operative bank for one district. This view was also expressed by the Rural Credit Survey Committee. A programme of rationalisation of the Central co-operative banking structure was taken up in the States during the Second Plan period through a process of merger or amalgamation of uneconomic or weaker units with a view to having one strong viable central bank in each district. The process of reorganisation is almost complete.

Central banks are the intermediate agency between the primary credit societies at the village level run by the agriculturists having no touch with the money market and the State co-operative banks run mainly from the metropolitan cities, having little direct association with the countryside. This agency is closer to the primary societies than an apex bank could be and affords opportunities to them for influencing its policies to suit their requirements and enables them to train themselves in sound banking principles and practices. The central bank's primary function is to mobilise the resources in the district for financing

its members to the maximum extent possible in addition to channelling the flow of funds from the State co-operative banks.

The number of Central co-operative banks in the country declined from 509 in 1951-52 to 346 in 1965-66 mainly due to the process of amalgamation and reorganisation referred to above. The paid-up share capital of central banks recorded a substantial increase from Rs. 4.62 crores at the end of 1951-52 to Rs. 69.37 crores by 1965-66, the rise being more marked since 1956-57 largely due to the increased State contribution to the share capital of these institutions, as also due to the scheme of linking the borrowings of societies to their share holding in the banks. The available data since 1956-57 on ownership of share capital show that the share capital held by Government increased from Rs. 1.26 crores in 1956-57 to Rs. 19.27 crores in 1965-66. The total reserves of these banks showed a gradual rise from Rs. 5.19 crores to Rs. 25.62 crores over the same period. The increase was in part due to the constitution of the 'special bad debts reserve' and 'Agricultural Credit (Stabilisation) Fund,' the former at the instance of the Mehta Committee and the latter at the instance of the Rural Credit Survey Committee. The composition of the working capital of these banks shows an increasing dependence on funds borrowed from apex banks, as will be seen from Table IX.

The trends in the constituent items of working capital of Central co-operative banks are more or less same as in the case of State co-operative banks. In terms of proportion to working capital, the owned funds were steady around 16 to 18 per cent, deposits declined from 64 per cent to 40 per cent while borrowings showed an increase from 20 per cent to 40 per cent during the period 1951-52 to 1965-66. The volume of fresh advances made by Central co-operative banks showed a considerable increase from Rs. 105.64 crores in 1951-52 to Rs. 366.09 crores in 1965-66. Their outstanding loans as on June 30, 1966 amounted to Rs. 437.72 crores of which Rs. 434.36 crores were due from societies and Rs. 3.36 crores from individuals and others (Table X). Both in absolute terms and in relation to outstandings, overdues increased over the period. As at the end of June, 1966, overdues formed about a fifth of the outstanding loans.

TABLE IX

WORKING CAPITAL OF CENTRAL CO-OPERATIVE BANKS

(*Rs. in crores*)

Item	As at the end of June							
	1952		1956		1961		1966	
	Amount	Percentage to working capital	Amount	Percentage to working capital	Amount	Percentage to working capital	Amount	Percentage to working capital
1. Working capital	60.11	100.0	92.67	100.0	304.05	100.0	583.52	100.0
2. Owned funds	9.81	16.3	15.15	16.4	50.87	16.7	101.94	17.5
3. Deposits	38.24	63.6	55.71	60.1	112.02	36.8	236.59	40.5
4. Borrowings	12.07	20.1	21.80	23.5	141.17	46.4	244.99	42.0

Source: Statistical Statements Relating to the Co-operative Movement in India.

TABLE X

OUTSTANDING LOANS OF CENTRAL CO-OPERATIVE BANKS

(*Rs. in crores*)

Item	As at the end of June			
	1952	1956	1961	1966
1. Co-operative societies	32.85 (91)	50.86 (94)	216.37 (98)	434.36 (99)
2. Individuals and others	3.06 (9)	3.48 (6)	3.66 (2)	3.36 (1)
3. Total	35.91	54.34	220.03	437.72
Of which overdue	4.78 (13)	7.88 (15)	27.43 (12)	87.05 (20)

Note: Figures in brackets indicate percentages to total.
Source: Statistical Statements Relating to the Co-operative Movement in India.

Primary Agricultural Credit Societies

The primary credit society forms the base of the co-operative credit structure and on its working depends, to a large extent, the soundness of the whole co-operative credit structure. The village credit society is the best agency to inculcate the habit of thrift, self-help and mutual help among its members. It is engaged in securing for its members services of various kinds. It has to keep the concepts of mutuality and ethical dealings in mind and ensure sufficient social cohesion.

The primary agricultural credit societies cover different types of credit societies, though the common feature of all these different societies is that most of their members are agriculturists. The group includes (1) large size societies which include rural banks, agricultural banks and credit unions, (2) service co-operatives and (3) other small size societies. The small size societies constitute a composite category and include single purpose as well as multipurpose societies. Shifts in the policy regarding the type, size and functions of the primary credit societies during the last decade to which a reference has already been made have influenced the pattern of organisation of societies. Though the Rural Credit Survey Report recommended the organisation of large size societies, in the present co-operative development policy, on the basis of which the district development plans are

formulated, the emphasis is on promotion and development of service co-operatives. The primary functions of a service co-operative are provision of short and medium-term credit, supply of agricultural and other production requirements and collection of agricultural produce for sale through the marketing society. In addition to these functions, these co-operatives help in the formulation and implementation of village plans for increasing agricultural production. Though organisation of large size societies has been discontinued, those which were already organised are allowed to continue. Thus, three types of societies, *viz.*, large size, erstwhile small size and the newly organised service co-operatives continue to exist at present in most of the States.

The primary agricultural credit societies which constitute the largest group of societies in the country increased from 1.08 lakhs to 1.92 lakhs during the period 1951-52 and 1965-66. Of the total, about 70 per cent were of the limited liability type and the rest were of unlimited liability type. Though in some States a large number of villages was technically covered by the societies, the extent of effective coverage was small as there was a large number of dormant societies; their number constituted about 13 per cent of the total number of societies in 1965-66. Moreover, in the case of many of the working societies, their activities were largely confined to the headquarter villages. The membership of agricultural credit societies was 261.35 lakhs at the end of 1965-66 as against 48 lakhs at the end of 1951-52. Although the membership has been technically thrown open to all classes of cultivators, it has been observed that in many areas the membership mainly comprises of big and medium land holders, the proportion of small land holders being very small. Further, bulk of the tenant cultivators still continue to remain outside the co-operative fold.

The primary agricultural credit societies made some progress in building up their resources during the last 15 years. Though State contribution was, to some extent, responsible for the increase in the total share capital, the increase in membership during the period was a major factor. The mobilisation of deposits by these societies being meagre, they depended to a

TABLE XI

WORKING CAPITAL OF PRIMARY AGRICULTURAL CREDIT SOCIETIES

(*Rs. in crores*)

Item	As at the end of June							
	1952		1956		1961		1966	
	Amount	Percentage to working capital	Amount	Percentage to working capital	Amount	Percentage to working capital	Amount	Percentage to working capital
1. Working capital	45.22	100.0	79.10	100.0	273.92	100.0	546.56	100.0
2. Owned funds	17.67	39.1	29.25	37.0	75.55	27.6	148.92	27.2
3. Deposits	4.40	9.7	7.05	8.9	14.59	5.3	34.49	6.4
4. Borrowings	23.15	51.2	42.80	54.1	183.78	67.1	363.15	66.4

Source: Statistical Statements Relating to the Co-operative Movement in India.

large extent on the borrowing from the Central co-operative banks (Table XI).

As may be seen from Table XII, the average membership per society for India as a whole rose from 44 at the end of 1951-52 to 136 at the end of 1965-66. The average share capital and deposits per society and per member have shown sharp rise during the same period; still, the average level continued to be low.

TABLE XII

PRIMARY AGRICULTURAL CREDIT SOCIETIES
ALL-INDIA AVERAGES

(in Rs.)

Item	As at the end of June			
	1952	1956	1961	1966
1. Membership per society	44	49	80	136
2. Working capital per society	4,190	4.946	12,913	28,481
3. Share capital				
(*a*) per society	827	1,051	2,722	6,009
(*b*) per member	19	22	34	44
4. Deposits				
(*a*) per society	408	441	688	1,797
(*b*) per member	9	9	9	13

Source: Statistical Statement Relating to the Co-operative Movement in India.

The advances of these societies to their members increased more markedly since the introduction of the Integrated Rural Credit Scheme as may be seen from Table XIII.

TABLE XIII

PRIMARY AGRICULTURAL CREDIT SOCIETIES
CREDIT OPERATIONS

Year	Loans advanced during the year		Loans outstanding at the end of the year (Rs. in crores)	Loans overdue at the end of the year (Rs. in crores)	Overdues as percentage of outstandings
	Total (Rs. in crores)	Average per member (Rs.)			
1951-52	24.21	51	33.66	8.52	25
1955-56	49.62	64	59.84	14.96	25
1960-61	202.75	119	218.00	44.30	20
1965-66	337.94	129	426.90	125.36	29

Source: Statistical Statements Relating to the Co-operative Movement in India.

Loans advanced per member which rose from Rs. 51 to Rs. 64 from 1951-52 to 1955-56 doubled between 1955-56 and 1965-66. The position regarding overdues, however, had been showing a disquieting trend.

Since only viable and strong credit societies can play a vital role in disbursement of short-term and medium-term credit, the base of the primary credit structure has to be revitalised by liquidating dormant societies and societies which have no chance of development and by amalgamating the weak societies with the stronger ones. Steps in this direction were taken by the Governments in many States. The programme of revitalisation was reviewed at the Annual Conference of Registrars of Co-operative Societies and State Ministers for Co-operation held at Hyderabad in June, 1964. It was decided to chalk out a programme of revitalising the primary credit societies and developing them into viable units. For this purpose, the Conference suggested that the State Governments should undertake a survey for delimiting areas within the accepted population coverage which would ensure adequate business potential necessary to make a society viable.

During 1965, the Government of India appointed a Committee under the Chairmanship of Shri R. N. Mirdha to recommend measures for weeding out non-genuine societies and preventing their registration and for the elimination and prevention of vested interests from entrenching themselves in co-operative institutions. The Committee recommended certain basic criteria for registration and organisation, enrolling membership, election to managing committee and comprehensive audit with a view to preventing non-genuine and uneconomic societies coming into existence.

The recommendations of the Mirdha Committee were endorsed by the Annual Conference of Registrars of Co-operative Societies and State Ministers for Co-operation held in Bombay in October-November, 1965 and it was decided to implement the recommendations in all the States.

Land Mortgage Banks

For provision of long-term credit to agriculture a separate co-operative organisation has been set up and it is known as the

land mortgage banking system. This is a two-tier organisation with the apex bank at the State level and the primary banks at the district/taluka level. Long-term credit is provided to agriculturists on the security of land which is mortgaged to the bank. The period of loan varies from 10 to 20 years. The resources of these banks are mainly collected through floatation of debentures, which are guaranteed as to the principal and interest by the State Government concerned. The Rural Credit Survey Report recommended establishment of a central land mortgage bank in each State and continuance of the two-tier structure.

While the set-up of the long-term structure is the same at the apex level, *i.e.*, a central land mortgage bank in each State, there is considerable variation in the organisation below that level. In Madras, Andhra Pradesh and Mysore, the operational unit below the State level is a primary land mortgage bank at the taluka level. In the Saurashtra region of Gujarat and in Bihar, the apex land mortgage bank advances loans directly to individuals through its branches. In Maharashtra, Punjab, Madhya Pradesh, Travancore-Cochin area of Kerala, Uttar Pradesh, Rajasthan and West Bengal, primary land mortgage banks are organised at the district level. In Madhya Pradesh, areas not served by primary land mortgage banks are financed by Central co-operative banks through their land mortgage banking sections.

There were 18 central land mortgage banks and 673 primary land mortgage banks at the end of 1965-66 as against 6 central land mortgage banks and 289 primary land mortgage banks at the end of 1951-52. As stated already, the central land mortgage banks raise the funds required by them largely by the issue of debentures while primary land mortgage banks obtain funds mainly from the central land mortgage banks. The progress achieved by the land mortgage banks in India during the last 15 years may be seen from Table XIV.

A noteworthy feature of the advances portfolio of central land mortgage banks during 1965-66 was that out of the total of Rs. 56.41 crores, as much as Rs. 14.39 crores were for land improvement and Rs. 16.13 crores were for purchase of machinery. The loans for debt redemption were Rs. 3.37 crores.

TABLE XIV

FINANCIAL POSITION AND LOAN OPERATIONS OF LAND MORTGAGE BANKS

(*Rs. in crores*)

Item	Central Land Mortgage Banks				Primary Land Mortgage Banks			
	1951-52	1955-56	1960-61	1965-66	1951-52	1955-56	1960-61	1965-66
1. Number of banks	6	9	18	18	289	302	463	673
2. Membership·								
Banks and societies	404	491	696	838	—	—	—	—
Individuals (in thousands)	34	90	2.74	6.64*	2.14	3.14	6.69	18,44
3. Working capital	10 17	18.53	47.60	206.59	7.59	11.35	26.99	136.93
4. Loans made during the year								
Banks and societies	2.51	2 83	7.18	39.68	—	—	—	—
Individuals	—	—	4.45	16.73	1.30	1.74	7.17	41.22
5. Outstandings at the end of the year								
Banks and societies	—	—	23.53	121.18	—	—	—	—
Individuals	8.05	13 08	13.08	42.08	6.96	10.51	24.66	124.33

* Includes Government.

Source: Statistical Statements Relating to the Co-operative Movement in India.

This was in contrast to the position obtaining before the planning era started, when the most predominant purpose of loans was redemption of old debts.

AGRICULTURAL REFINANCE CORPORATION

It is observed that the land mortgage banks because of their meagre resources and existing institutional framework were not in a position to finance specific area development or similar other projects for agricultural development. As the expenditure on such projects will be heavier in the initial stages, the scale of finance will have to be much higher than that permissible under the existing rules. The gestation period of each scheme will vary with the type of crops raised. Thus the initial investment, made out of borrowings, can be repaid only after a period of years; and the repayment schedule itself will have to provide for deferred repayments of principal and interest. The implementation of such development projects will need technical guidance, inter-departmental co-operation and close supervision of a far higher order than that is made available by the existing structure of the land mortgage banking system.

The need for providing finance for development of plantation crops was also emphasized by the Conference of Land Mortgage Banks held in September, 1960 and the Standing Advisory Committee on Agricultural Credit. It was pointed out that the commercial banks could not undertake the responsibility of providing long-term loans for such special schemes unless refinancing facilities were made available to them. Thee considerations led to the establishment of the Agricultural Refinance Corporation on July 1, 1963.

The Corporation has an authorised share capital of Rs. 25 crores divided into 25,000 fully paid-up shares of Rs. 10,000 each. In the first instance, 5,000 shares valued at Rs. 5 crores were issued of which an amount of Rs. 2.50 crores was subscribed by the Reserve Bank, Rs. 1.50 crores by State co-operative banks, and central land mortgage banks and Rs. 1 crore by the scheduled banks, investment and insurance companies. The shares are treated as trustee securities and are guaranteed by the Central Government as regards repayment of principal and payment of

an annual dividend, fixed at 4½ per cent in the case of the first issue. The Government of India gave an interest-free loan of Rs. 5 crores to the Corporation, the repayment of which would commence only after 15 years. The Corporation is also empowered to borrow from the Reserve Bank (for a period not exceeding 18 months) and from the Central Government and other institutions approved by the Government. It can issue bonds and debentures and accept fixed deposits for 12 months and more. The maximum borrowing power of the Corporation through all these sources is limited to 20 times its paid-up capital and reserve fund.

The Corporation will grant financial assistance for schemes of (*a*) land reclamation, preparation of land for full utilisation of irrigation facilities, (*b*) development of special crops such as arecanut, coconut, cashewnut, cardamom, coffee, tea, etc., and (*c*) development of mechanised farming, use of electricity for tube-wells, pump sets and development of animal husbandry, dairy farming, pisciculture and poultry farming. Besides being economic, the schemes to be financed will have to be commercially paying, pertaining to specified areas and specified crops; they should also be compact and composite ones, amenable to close and intensive supervision and evaluation. Further, the schemes should be capable of being worked through the existing co-operative structure. All State co-operative banks, central land mortgage banks and scheduled banks as are shareholders of the Corporation are eligible for financial assistance, which will be mainly by way of refinance to the borrowing institutions. In special cases where a loan for financing a particular activity is considered necessary, the Corporation might directly finance those co-operative societies which are approved by the Reserve Bank for that purpose. The Corporation would grant medium-term loans (3 to 5 years) and long-term loans (for over 5 years, up to 15 years and in exceptional cases up to 20 years) at 5½ per cent per annum (subject to revision), the minimum amount being limited to Rs. 1 lakh. Details regarding the operations of the Corporation during the last four years are indicated in Table XV.

TABLE XV

REFINANCE FROM THE AGRICULTURAL REFINANCE CORPORATION

(*Rs. in crores*)

Year (April-March)	No. of schemes approved	Total financial outlay of the scheme	Refinance commitment by the Corporation	Drawals from the Corporation
1963-64	2	2.4	2.2	—
1964-65	5	20.62	16.9	—
1965-66	26	15.50	12.3	4.24
1966-67	13	11.9	9.6	2.30

MARKETING SOCIETIES

The co-operative marketing societies numbering 12,767 as at the end of June, 1965 accounted for 7.5 per cent of total co-operative societies in India. Of these, 9,354 or 73 per cent were sugarcane supply societies and 2,903 or 23 per cent were general purpose marketing societies. Of the remaining, fruits and vegetables societies accounted for 2 per cent and the rest by societies dealing in cotton, coconut, arecanut, tobacco and other specialised commodities.

Policy and Development

The first phase in the development of co-operative marketing societies covered a decade and half during the World War II and post-war period. Under conditions of control and rationing most of the societies functioned as agents for procurement and distribution of controlled foodgrains and other articles. With the lifting up of the controls since 1951-52 and the emergence of free market many societies went out of operation and those existed concentrated on distribution of such commodities as fertilizers, etc. The period beginning from decontrol to the introduction of the Second Five-Year Plan was a transitional period for marketing co-operatives during which period except the single commodity societies like cotton sale societies in Maharashtra and Gujarat and few isolated societies in other areas, marketing societies in general were actually inoperative.

As early as 1946, the Co-operative Planning Committee emphasized the necessity for planned development of co-operative

marketing societies and laid down certain overall targets. The Committee recommended that within ten years, the co-operative marketing societies should be able to sell 25 per cent of marketable surplus of agricultural produce and for this purpose there should be 2,000 marketing societies, 11 Provincial marketing societies and an All-India Marketing Association.[4] The development of storage and warehousing capacity, increased State aid and assistance were also envisaged and specific recommendations were made in regard to each of these aspects. These recommendations, however, were not fully implemented. The First Five-Year Plan emphasized the need for developing marketing societies. But no appreciable progress was made during the First Plan period. The Rural Credit Survey Report recommended a series of measures for planned development of co-operative marketing societies in the agricultural sector. This included State participation in share capital of marketing societies, establishment of the National Co-operative Development and Warehousing Board, the Central Warehousing Corporation, etc., to which a reference has been made already. The Second Five-Year Plan incorporated many of the recommendations of the Rural Credit Survey Report and set forth targets and formulated specific schemes for development of co-operative marketing. The Second Plan envisaged a target of 1,800 primary marketing societies to be organised and 1,500 godowns to be constructed. The National Co-operative Development and Warehousing Board was established in 1956 to act as the chief agency for planning and promoting development schemes relating to marketing societies. The Third Five-Year Plan had gone a step further inasmuch as it fixed targets not only in terms of the number of societies to be organised but also relating to the quantity of produce to be handled by co-operatives. The progress in the working of co-operative marketing societies is discussed in the next chapter.

NON-CREDIT CO-OPERATION

Co-operative movement in the non-credit sphere of agriculture received an impetus during the World War II period, although

4 Report of the Co-operative Planning Committee appointed by the Government of India on the Recommendation of the Fourteenth Registrars' Conference (1946), pp. 64-65.

sporadic attempts were made earlier when the organisation of credit co-operatives was taken up. The impetus during the war arose mainly from the desire of improving the conditions of the cultivators and helping them in activities allied to agricultural production. Agricultural non-credit co-operation received a further stimulus during the Second Five-Year Plan period when the co-operative movement as a whole was considered an instrument of agricultural development and for that matter State partnership was provided on an increasing scale. Since then co-operation in agricultural non-credit sphere has been continuously growing. The main activities under agricultural non-credit co-operation are to enlarge the area of cultivation, to adopt improved agricultural production techniques through the use of improved seeds, chemical fertilizers, irrigation facilities and to render all possible assistance in activities allied to agriculture such as fisheries, animal husbandry, poultry, etc. Thus, in the rural sector agricultural non-credit co-operation would comprise farming, irrigation, milk, fisheries societies, etc.

Co-operative Farming Societies

The Co-operative Planning Committee which presented its report in 1946 broadly classified the co-operative farming societies into four categories, namely, better farming, joint farming, collective farming and tenant farming societies. In fact, the place of co-operative farming in one or more of these forms in the reconstruction of the India's rural economy has been the subject of serious consideration. The Nagpur Resolution of January, 1959 of the Congress Party lent support to the organisation of co-operative joint farming and suggested that the future agrarian pattern should be based upon this form of co-operative organisation. With a view to forming a practical programme for implementation of this resolution, the Working Group on Co-operative Farming was appointed in 1959. In its report, the Working Group emphasized the need for flexibility in approach in the organisation of co-operative farming societies and suggested that such societies be organised on a voluntary basis. The subsequent deliberations at various levels led to the emergence of the scheme of pilot projects consisting of about ten co-operative farming societies in every district during the Third Five-Year Plan period.

The total number of farming societies as at the end of June, 1965 was 6,894 as against 6,325 as at the end of June, 1961. The number of joint farming societies increased from 2,080 in June, 1961 to 4,892 in June, 1965, *i.e.*, almost doubled itself and their total membership also increased two-fold from 51 thousand in 1961 to 104 thousand by June, 1965. The number of members working full-time and part-time at the end of June, 1965 was 47 thousand and 15 thousand respectively. The area commanded by these societies was 6.7 lakh acres of which 4.6 lakh acres were under cultivation. The value of production and that of sales amounted to Rs. 3.6 crores and Rs. 2.9 crores respectively during 1964-65. The collective farming societies too displayed a significant improvement during 1964-65, their number having increased from 1,104 in 1961-62 to 2,002 and their membership from 37 thousand to 65 thousand. The area commanded and cultivated by these societies during 1964-65 was 3.05 lakh acres and 1.93 lakh acres respectively. The value of production and that of sales were of the order of Rs. 93 lakhs and Rs. 86 lakhs respectively.

Of the total 6,894 (joint and collective) farming societies in 1965, the Statewise distribution was Punjab : 1,433, Uttar Pradesh : 1,217, Maharashtra: 1,003, Rajasthan: 600, Madhya Pradesh: 562, Mysore: 391, Assam: 303, Bihar: 301 and Gujarat: 245. The remaining 12 per cent of the societies were distributed over States like Andhra Pradesh, Kerala, Madras, Orissa, West Bengal, Jammu & Kashmir and six Centrally Administrated States. Except in Maharashtra and Gujarat, the trend is towards the organisation of joint farming societies in the other States.

In Punjab, co-operative farming is of recent growth; the number of societies rising from 441 in June, 1956 to 1,433 in June, 1965. It is significant to observe that during 1965-66 the joint and collective farming societies covered a commanded area of 1.4 lakh acres, all of which was cultivated by them. Their membership was 26,000 of which 9,000 was accounted for by land holders. Most of the societies were said to be organised by the landlords and big farmers in order to avail of the financial assistance from Government and the benefit of ceiling limit on land holdings as applicable to co-operatives. Another feature of the farming societies in the Punjab was that machinery and imple-

ments were more important than land and buildings. The Punjab ranked first in respect of value of foodgrains produced and came second to Uttar Pradesh in the value of foodgrains sold by the farming societies.

Farming societies in Uttar Pradesh are the result of a scheme launched for the first time in 1953-54. Since then their number continued to grow gradually from 104 in 1953-54 to 220 in 1955-56 and further to 1,217 by 1964-65. Their total membership in June, 1965 stood at 24 thousand of which 14 thousand were agricultural labourers (of which about 7 thousand were land holders) and the remaining 'others.' There were 16,500 working members and more than three-fourths of them were engaged in full-time field operations. The area commanded and cultivated by these societies was 1.5 lakh acres and 1.3 lakh acres respectively.

In Maharashtra, the organisation of co-operative farming societies has been undertaken since 1949. But in 1952-53, stress was laid on their consolidation rather than expansion. Later, the scheme of service co-operatives gave a further impetus to the expansion of farming societies in this State. Their membership was 22,300 as on June, 1965. As in Uttar Pradesh and the Punjab, more than two-thirds of the membership was drawn from agricultural labourers. Nearly 19,600 of the members were working and as many as 12,500 of them were engaged in full-time field operations. It may be mentioned that there is a wide gap between the area commanded (1.6 lakh acres) and area cultivated (1 lakh acres) by the farming societies in Maharashtra as compared to the societies in Uttar Pradesh and the Punjab.

To assess the progress of co-operative farming and to evaluate the working of the pilot projects, a Committee of Direction on Co-operative Farming under the Chairmanship of Professor D. R. Gadgil was set up in July, 1963. The Committee submitted its report in September, 1965 and the recommendations of the Committee were considered and generally accepted in the Conference of the State Ministers of Co-operation held in Bombay in October-November, 1965. The programme of co-operative farming in the Draft Fourth Five-Year Plan is based on these recommendations. The programme will continue to be voluntary and will be directed to the small and uneconomic classes of culti-

vators. The societies will be located in areas offering potential for the success of the programme and so organised as to achieve cohesion among the members and have the resources to function as viable units. Special attention will be given to revitalisation of the weak, stagnant and disintegrating societies.

Irrigation Co-operatives

The credit for organisation of the irrigation co-operatives goes to Bengal which is faced with the problem of over-population on the one hand and for conservation of its water resources on the other. The problem of protection of arable lands from floods during rainy season is another reason leading to the organisation of irrigation co-operatives. As an experimental measure, the first society was organised in 1919 and during subsequent years the progress in regard to organisation of irrigation societies has been rather phenomenal. Partition of the Punjab and Bengal in 1947 provided a further stimulus to the organisation of such societies. Prior to the Partition, no need was felt for such societies in the Punjab because of the existence of an excellent network of canals completed during the British regime. With the Partition, the then existing network of canals went to the share of West Pakistan and an acute need was felt for increasing irrigation facilities in the State. The idea of providing facilities through co-operatives in the Punjab was given practical shape in 1948-49 when a few zamindar residents of Gurgaon district decided to pool their resources for sinking a percolation well. Subsequently, efforts were made to extend co-operation to sinking of tube-wells. With the result a number of tube-wells were installed by the irrigation societies, mainly in the districts of Amritsar, Ferozepur, Jullundur and Ambala. The number of irrigation societies in the country at the end of 1964-65 stood at 1,471 having an aggregate membership of 68 thousand and covering a commanded area of 4 lakh acres. The number of irrrigation societies in the several States were, Uttar Pradesh: 457, Punjab; 242, Gujarat: 203, West Bengal: 144, Maharashtra: 125, Madhya Pradesh: 65, Andhra Pradesh: 58 and Orissa: 55.

Irrigation societies in Uttar Pradesh covered in 1964-65 a membership of about 7,000 and commanded an area of 91,896

acres and ranked first in respect of both among the States. In terms of membership, Maharashtra ranked first, followed by Andhra Pradesh, the Punjab and West Bengal. In Andhra Pradesh, the number of societies and area commanded, however, were not much compared to the other 3 States. Though Punjab ranked third in terms of membership, the commanded area of the societies at 85,293 acres was second only to that in Uttar Pradesh. Large proportion of the area commanded in the Punjab was irrigated and it is one of the few States where the societies have been functioning relatively with great success. Membership of societies in Gujarat was about 7 thousand and covered a commanded area of about 31,605 acres. One of the important features of the societies in Gujarat is that the value of their assets and liabilities like land, buildings, plant and machinery was relatively high, next only to that in Maharashtra. The value of plant and machinery alone was Rs. 50 lakhs and that of land and buildings about Rs. 11 lakhs in Gujarat.

The commanded area of the societies in Maharashtra was less than that of societies in Uttar Pradesh and the Punjab. The value of plant and machinery of the societies was Rs. 55 lakhs and that of land and buildings about Rs. 46 lakhs. Taking all the States together, the value of irrigation works executed up to the end of 1964-65 was Rs. 2.04 crores, Maharashtra and Gujarat alone accounting for Rs. 1.47 crores. Of the irrigation societies, 348 worked on profit and most of them were situated in Gujarat and the Punjab whereas 709 societies neither incurred loss nor earned any profit during 1964-65; most of them came from Uttar Pradesh and West Bengal. About 414 societies worked on loss during 1964-65, most of them being situated in West Bengal, the Punjab and Gujarat.

Milk Co-operatives

The co-operative milk marketing structure usually consists of two tiers, the milk supply societies at the primary level and the milk unions at the secondary level, conceived as federations of the former. The societies are engaged in collection of fluid milk from their individual members. The milk assembled by these societies is either taken delivery of or delivered to the milk unions for distribution in the urban areas. While milk supply

societies have been organised in almost all the States, milk unions have not so far been organised in four States, *viz.*, Jammu & Kashmir, Rajasthan, Punjab and Orissa. In these four States, marketing of milk is undertaken by the societies themselves. In some cases the unions undertake manufacture of milk products, such as, ghee, milk powder, cheese, etc. Except the Kaira District Milk Producers' Union, no other union had taken up the pasteurisation of milk on a large scale. However, a few unions in other States possess some equipments for the manufacture of butter, ghee and cheese. These products are manufactured by them in winter when the supply of milk is plentiful. The Government in various States are providing financial assistance by way of loans and subsidies to acquire pasteurisation plants and other necessary equipments and also managerial assistance to milk unions. A number of unions have undertaken activities such as, supply of cattle feed, provision of veterinary aid and improvement of cattle breeds, etc.

At the end of June, 1965, there were 133 milk supply unions, of which 37 were situated in Maharashtra, 24 in Madras, 22 in Uttar Pradesh, 19 in Andhra Pradesh and 10 each in Gujarat and Kerala. The number of primary societies and individuals affiliated to these unions was 5,260 and 17,400 respectively. In Madras, Uttar Pradesh and Maharashtra there was significant number of societies as members while in Kerala, Andhra Pradesh and Gujarat there was preponderance of individuals in the membership of milk unions. During 1964-65, these unions purchased milk worth Rs. 9.81 crores and sold milk and milk products worth Rs. 9.75 crores and Rs. 3.27 crores respectively. Milk unions in Uttar Pradesh which were situated in important cities like Lucknow, Allahabad, Varanasi, Kanpur, Meerut, etc., have made arrangements for converting milk into butter, ghee and cheese.

There were 7,264 milk supply societies covering a membership of 5.70 lakhs. Of these, as many as 2,458 societies covering a membership of 2.45 lakhs were situated in Madras State. The value of milk purchased by all the societies in the country was Rs. 12.46 crores and their sales of milk and milk products amounted to Rs. 14.03 crores and Rs. 31.3 lakhs

respectively. Although Madras State is leading in the number and membership of milk societies, the value of milk purchased and milk sold was the highest at Rs. 5 crores and Rs. 5.8 crores respectively in Gujarat. This State also accounted for about one-third of the value of sale of milk and milk products of the societies.

In addition to milk unions and milk supply societies, there were 7 ghee unions. 6 in Uttar Pradesh and 1 in Madhya Pradesh during 1964-65. Membership of the ghee unions comprised 221 primary societies and 89 individuals. Apart from these unions, there were primary societies that were engaged in the conversion of ghee and these numbered 177 during 1964-65. Of these as many as 160 were situated in Uttar Pradesh.

Fisheries Societies

At the end of June, 1965, there were 3,205 fishermen's societies with an aggregate membership of 3.27 lakhs. Most of these societies were in Andhra Pradesh, West Bengal, Kerala, Madras, Maharashtra and Assam.

Although in terms of number of societies, West Bengal ranked second to Andhra Pradesh, it lagged far behind Maharashtra and Madras in respect of membership and value of assets owned by the societies. It appears that most of the societies in West Bengal are small and undertake catch on their own account. In Andhra Pradesh, 514 fishermen's societies were functioning during 1964-65 with a membership of 46 thousand. However, with the introduction of the system of auctioning fishing rights over water courses, the co-operatives were reported to be in a disadvantageous position. The main function of the fishermen's societies in Madras, which numbered about 400, is confined to the acquisition of land rights over water courses. The members of the societies sell their catch on individual account in the open market. A beginning has, however, been made by the members of the Mettur Dam Fishermen's Co-operative Marketing Society for pooling the catches and selling them to vendors at contracted rates. A scheme for providing modern fishing boats, nylon nets and quick transport vans to bring catch to the market has been launched through the federations of fishermen's co-

operatives. The scheme also envisages construction of curing sheds and godowns. In Kerala, a joint project of the Governments of India and Norway for the development of marine fishing has been launched at Quilon. The project envisages the introduction of mechanised fishing off the Kerala coast, training of local fishermen, boat-building and setting up of an ice and cold-storage plant. A sales organisation covering all the co-operatives of the project area has been registered. A co-operative project for development of fisheries along the South Canara Coast in Mysore through the South Canara District Fisheries Co-operative Federation with the financial assistance of the Agricultural Refinance Corporation has been recently sanctioned. Similar projects with the assistance of the Agricultural Refinance Corporation has been formulated in Gujarat, Madras, Kerala and Andhra Pradesh.

Crop Protection Societies

Organisation of crop protection societies had been undertaken only in the erstwhile Bombay State. The number of such societies in the State was 158 at the end of June, 1958. The cropped area covered by these societies was 4.53 lakh acres.

WEAVERS' CO-OPERATIVES

Among the different types of industrial co-operatives in India, the weavers' co-operatives constituted the largest single group in rural areas, the organisation of which dated back to the year 1905 in Madras State. The emphasis on co-operative development of village industries by the Royal Commission on Agriculture in 1928 followed by the decision of the Government of India in 1934 to revive the handloom industry by giving subsidies to the Provincial Governments stimulated interest in such co-operatives. A further fillip to the organisation of weavers' co-operatives was given by the recommendation of the Fact Finding Committee in 1940 to co-operativise the handloom industry and the distribution of yarn by the Government through these societies during the World War II and the post-war years. The Government of India in its 1948 Industrial Policy Resolution also emphasized the importance of giving a distinctly co-operative

bias to cottage and small scale industries. At the beginning of 1952, however, the handloom industry encountered an unprecedented crisis arising from the slump in handloom cloth trade. There was curtailment or stoppage of production on wider scale with consequent unemployment among the weavers. The steps to rehabilitate the handloom industry comprised (*a*) the constitution of the All-India Handloom Board, (*b*) the levy of an additional excise duty on mill-made cloth and (*c*) ensuring a market for handloom cloth. The general principles drawn up by the Handloom Board for grant of financial assistance which was to be largely channelled through co-operatives were (i) advancing loans to weavers to enable them to contribute to the share capital of co-operative societies, (ii) helping weavers' societies with working capital and (iii) setting up of marketing depots and inter-State depots.

Although the accepted pattern of the structure of weavers' co-operatives was one of primary societies at the village level and apex societies at the State level, in some areas there were central societies at the district level also. The primary societies were broadly classified into production and service societies. In production societies goods were produced and sold on societies' account, the profit and loss being borne by the societies themselves. In the service societies, goods were produced by members on their own account and profit or loss was borne by the individual members. The central societies were to supply raw materials and to arrange for marketing of cloth produced by primary units. These activities though similar to those of the apex societies were limited to smaller area of operation. There has been more than two-fold increase in the number and scale of operation of weavers' societies during the years 1950-51 to 1964-65, the rise being relatively more pronounced during the Second Plan period. The number of primary societies rose from 4,791 at the end of 1950-51 to 7,995 at the end of 1955-56 to 12,222 at the end of 1961-62 and further to 13,084 by 1964-65. The central and apex societies rose from 44 to 116 and from 9 to 21 respectively during the period 1955-56 to 1964-65. Membership recorded nearly 100 per cent increase to 13.05 lakhs in the case of primary societies. Statewise distribution of weavers' societies showed that out of 13,084 societies at the end of 1964-65,

Uttar Pradesh accounted for 1,577, Assam 1,567, Bihar 1,157, Punjab 1,128, Madras 1,109, Rajasthan 1,022, Andhra Pradesh 1,017, West Bengal 972, Mysore 807 and Maharashtra 787. Regarding membership, the States are not in the same order of importance and out of 13.05 lakh members, Andhra Pradesh with 2.6 lakhs stood first, followed by Madras (2.4 lakhs), Bihar (1.5 lakhs), Mysore (1.2 lakhs), Uttar Pradesh (1.1 lakhs), Maharashtra (0.8 lakh), West Bengal (0.7 lakh), Assam (0.4 lakh), Rajasthan (0.3 lakh) and Punjab (0.2 lakh). The value of production of handloom cloth by primary societies rose from Rs. 3.9 crores in 1955-56 to Rs. 39.3 crores in 1961-62 and further to Rs. 51.7 crores in 1964-65. The number of handlooms registered within the co-operative field increased from 11.6 lakhs in 1957-58 to 13.1 lakhs in 1964-65. According to available information, about two-third and more looms were brought in the co-operative fold in the States of Andhra Pradesh, Bihar, Madras, Mysore, Maharashtra and West Bengal. Assam stood at the bottom with only 6 per cent of the looms in the co-operative fold. The value of finished goods sold by primary societies at Rs. 54 crores (excluding yarn valued at Rs. 8.2 crores) in 1964-65 showed nearly a four-fold increase since 1950-51.

Apart from owned funds, the resources of handloom co-operatives consisted of funds borrowed from Government out of the Cess Fund created under the Khadi and Other Handloom Industries Development (Additional Excise Duty on Cloth) Act, 1953 and from the Central co-operative banks out of funds received by them from the Reserve Bank of India through the apex banks. The State Governments were sanctioned two-year loans up to 87½ per cent of the value of shares subject to a maximum of Rs. 100 on condition that weavers contributed 12½ per cent from their own resources. Such share capital loans outstanding at the end of June, 1965 was Rs. 61.6 lakhs. The amount of working capital loans from the Cess Fund disbursed during the First Plan period totalled Rs. 533.5 lakhs. The amount outstanding with the primary weavers' societies at the end of June, 1965 was Rs. 295 lakhs. It was felt that societies should borrow loans from institutional agencies. Therefore, the Government on the recommendation of the Credit Facilities Committee decided that with effect from April 1, 1957 the working

capital of weavers' co-operatives for production and that of apex societies for marketing of handloom cloth should be made available by the Reserve Bank of India through the apex and Central co-operative banks.

Accordingly, the Reserve Bank of India has been providing working capital funds under Section 17 (2) (bb) of the Reserve Bank of India Act at 1½ per cent below the Bank rate. Finance is provided on the basis of their actual requirements, subject to a ceiling of Rs. 500 per loom after taking into account the other resources available to the societies. There had been a request for raising the ceiling to at least Rs. 750 per loom, which was examined by a joint team of officers of the All-India Handloom Board and the Reserve Bank of India. However, with a view to introducing production-oriented system of lending to the weavers' societies in the banks, it was decided in consultation with the Standing Finance Committee of the All-India Handloom Board that, from April, 1966, a society might be considered as eligible for a normal credit of one-fifth of the actual production of handloom cloth produced on its own account during the previous year plus a reasonable increase in production expected during the year, provided the sales were at least 80 per cent of the production. Loans drawn for this purpose during 1966-67 up to March, 1967 was Rs. 504 lakhs as against Rs. 49 lakhs in 1957-58. Besides these funds, the Reserve Bank also provided working capital loans at the Bank rate to the apex weavers' societies under Section 17 (2) for trading in yarn. The apex societies had withdrawn Rs. 58 lakhs during 1966-67 and the outstanding loan as on March 31, 1967 was Rs. 24 lakhs. It was, however, observed that the progress in the drawal and utilisation of funds from the Reserve Bank of India under its scheme was not quite satisfactory. Hence, the Reserve Bank of India in consultation with the All-India Handloom Board introduced a pilot scheme in 1960-61 in selected areas in different States for intensive development of handloom co-operatives.

Besides the loans by the Government and the Reserve Bank of India, Government also provided grants and subsidies to weavers' (primary) societies for various developmental and promotional purposes amounting to Rs. 1.8 crores in 1964-65, bulk of which comprised rebate on sales.

Sales of goods produced by primary societies besides their own were undertaken to some extent by apex societies and these sales were sizable only in Andhra Pradesh, Madras, Maharashtra and Mysore. Sales depots and emporia have been opened in various States for the promotion of sale of handloom cloth produced by weavers' societies. With a view to stepping up these sales, the All-India Handloom Fabric Marketing Society has been sponsored by the All-India Handloom Board and the development of inter-State and international trade has been entrusted to this Society. It has already opened 'Handloom Houses' in Bombay, Madras, Calcutta and Delhi. In order to boost up exports, Government has sanctioned a scheme of incentives under which exporters of handloom cloth including those of co-operatives have been enabled to obtain licences for the import of coal tar, dyes, textile chemicals, cotton yarn, etc. Further, to enable the co-operative sector to participate in export trade, a scheme has been drawn up for the creation of a development fund which would be utilised for giving direct technical assistance both in the form of equipment, materials and staff to co-operative societies selected to participate in export drive and also for holding over goods produced by them till such time export orders for these items are received.

TARGETS AND ACHIEVEMENTS DURING PLAN PERIODS

We have discussed the developments in co-operative policy during the period since Independence and have reviewed the implementation and progress of these policies in several fields of co-operative activity. It may be useful to find out the extent of achievements in relation to the targets set in the first two Five-Year Plans and the rate of progress during the Third Plan.

The First Five-Year Plan had set up targets only in regard to co-operative credit of the order of Rs. 100 crores of short-term, Rs. 25 crores of medium-term and Rs. 5 crores of long-term finance. As against this, Rs. 50 crores were disbursed as short-term and medium-term loans and the outstandings in respect of long-term loans reached about Rs. 3 crores at the end of the Plan period.

In the Second Five-Year Plan, the target for membership was placed at 15 million (which was subsequently revised to 20

million), for co-operative credit at Rs. 200 crores (Rs. 150 crores for short-term and Rs. 50 crores for medium-term) and for long-term loans (outstandings) at Rs. 25 crores. During the period of first two Plans, the number of primary agricultural credit societies rose from about 1.08 lakh in 1951-52 to about 2.12 lakhs in 1960-61 and their membership from 4.8 million to 17 million. The short and medium-term credit dispensed by agricultural credit societies was of the order of Rs. 202.75 crores at the end of 1960-61. Of the loans issued during 1960-61, Rs. 182.82 crores were short-term loans, while Rs. 19.93 crores were medium-term loans. Thus, the achievement in respect of short-term credit exceeded the target laid down in the Second Plan whereas there was a shortfall of about Rs. 30 crores in respect of medium-term loans provided by the primary agricultural credit societies. As against the target of Rs. 25 crores (outstandings) in respect of long-term credit, the outstandings at the end of 1960-61 were to the extent of Rs. 37.74 crores. Thus, the agricultural credit sector of the co-operative movement registered a substantial progress during the Second plan period.

In the Third Five-Year Plan, co-operatives were assigned a vital role in implementing agricultural production. Targets were laid down in respect of number of societies, coverage, short-term, medium and long-term credit, marketing and processing. The targets for short-term and medium-term credit and long-term credit were placed at Rs. 530 crores (subsequently revised to Rs. 512 crores) and Rs. 150 crores respectively. Further as indicated earlier, the primary structure was to be reorganised such as to have only viable societies at that level. Besides, they were to reorient their lending policies such as to conform to the crop loan system in which lending is liberal and recovery is ensured by linking credit with marketing.

As against these targets and expectations, the total volume of short-term and medium-term credit of the primary agricultural credit societies in the last year of the Third Plan, *i.e.*, 1965-66, was Rs. 426.9 crores. The outstanding long-term loans as at the end of June, 1966 were Rs. 166 crores, fulfilling the target. The shortfall in achievement in short-term and medium-term loans can be attributed to a few structural and organisational weaknesses. For

example, firstly, the accepted principle that there should be only one central bank per district though stipulated as early as in 1952, became a reality only recently. Secondly, the principle that only viable societies should exist at the primary level and that the standards of viability should be enunciated in each State and that viable and potentially viable societies should be identified through a survey has not as yet been accomplished in parts of the country. Thirdly, a major structural requirement for the satisfactory working of central banks, *viz.*, that they should have their own staff to supervise the working of societies affiliated to them remains unfulfilled in parts of the country. Fourthly, progress in implementing the crop loan system of production-oriented credit and liberalising the restrictive features of current practice has been halting in most of the States except Gujarat and Maharashtra and to a limited extent in Madhya Pradesh. The limited progress achieved in these regards is evident from the report of the Working Group appointed by the Government of India to study the working of co-operatives in the districts selected for implementation of the Intensive Agricultural District Programme. The Group, in its report published in March, 1966, observed that steps were being taken to liberalise credit policies in these districts to facilitate smooth flow of credit for intensive production programme and recommended, *inter alia,* early completion of the reorganisation of the primary credit structure. The Committee also called for implementation of the programme of intensive development of marketing and its linking with credit. This aspect of interlinking credit with marketing needs special mention. Because a fourth major weakness of the co-operative credit situation that has emerged in recent years is the serious deterioration in repayment performance. This contrasted with improved recoveries envisaged under the Integrated Scheme. Overdues as a percentage of outstanding loans at the primary level increased from 20 in 1960-61 to 23 in 1964-65 and further to 29 in 1965-66. The increase in overdues is, in part, due to natural calamities but, in the main, due to inadequate arrangements for supervision, on the one hand, and the common failure to link credit and marketing on the other.

The tentative estimate of short-term and medium-term co-operative credit in 1970-71 was put at Rs. 650 crores in the Draft

Outline of the Fourth Five-Year Plan. A similar estimate in regard to fresh loans to be advanced by co-operative land mortgage banks during the Fourth Plan was Rs. 300 crores. With all this it will not be possible to meet in full the credit requirements of agriculture in the Fourth Plan by the co-operative credit structure, partly because of the weaknesses of the structure in some areas and partly because of the fact that there are classes of cultivators who do not join co-operative societies.

An Informal Group of experts to advise on 'Institutional Arrangements for Agricultural Credit' was appointed by the Reserve Bank in 1964-65. The Group was appointed in the main in the light of the unevenness in the pace of co-operative development in the country, with stagnation or retrogression in credit being noticed in certain areas. The Group reviewed the existing position in such areas in relation to the urgent need for increasing agricultural production and the role assigned to co-operative credit in this context. While recognising the co-operatives as the most suitable agency for the dispensation of agricultural credit, the Group recommended the establishment of State Agricultural Credit Corporations, as a transitional arrangement, in the Eastern States of Assam, Bihar, West Bengal and Orissa and in Rajasthan where co-operative credit had made little headway. The co-operative credit structure in these States will thus be enabled to concentrate in the immediate future on reorganising and strengthening itself without being burdened with an expanding coverage and clientele and in due course, to equip itself to take over the full responsibility for institutional credit and make it possible for the Corporations to be withdrawn from the scene.

Besides, the Group also suggested that a comprehensive enquiry should be taken up at the end of the Third Five-Year Plan to review the entire position in regard to rural credit in the light of the efforts made during the interregnum. As a sequel to this, as also in pursuance of a recommendation of the Standing Advisory Committee on Rural and Co-operative Credit, the Governor of the Reserve Bank of India appointed the All-India Rural Credit Review Committee in July, 1966. The Committee is to review the supply of rural credit in the context of the Fourth Five-Year Plan in general, and of the credit requirements of the

programme of intensive agricultural production contemplated in different parts of the country, in particular. On the basis of its review, the Committee is required to make recommendations, among other things, in respect of the progress in the supply of rural credit, fertilizers, improved seeds, etc., the working of the crop loan system, and the progress made in the setting up of Agricultural Credit Corporations recommended by the Informal Group.

Besides, the Report of the Committee on Fertilisers (commonly referred to as the Sivaraman Committee) appointed by the Government of India, was published towards the end of 1965. The Report, in addition to making recommendations both as regards the target of plant food consumption and the policies required for achieving those targets in the spheres of distribution, marketing, pricing, extension and promotion, also dealt in broad terms, with the problem of credit. The Fertiliser Association of India which considered these aspects felt that in regard to credit, a more detailed survey was needed. Because fertilizer credit though is a part of general agricultural credit, is important in view of its growing proportion in the total volume of such credit and the key role of fertilizers in increasing agricultural production. It, therefore, appointed a Committee under the Chairmanship of Shri B. Venkatappiah to make specific proposals in respect of credit required at all the stages subsequent to manufacture of fertilizers including distribution by the wholesaler and the retailer and purchase by the cultivator. In its report, published in March, 1968, the Committee has placed the total distribution credit needs in 1970-71 at Rs. 297 crores. Envisaging a significant role for the co-operative sector in distribution, the Committee has estimated that by 1970-71, the co-operative distribution agencies may be in a position to handle up to 55 per cent of the total available supplies of fertilizers in the country. To enable the co-operative distribution agencies to raise larger volume of distribution credit from the co-operative banks, commercial banks and the State Bank of India, the Committee has proposed that the State Governments should make liberal contributions to share capital. The banks which advance such credit could seek the protection of Fertilizer Credit Guarantee Corporation also proposed by it. The Committee has also suggested that pending adequate streng-

thening of the co-operative distribution agencies, the manufacturers might make supplies to these co-operatives on deferred payment basis against the guarantees of the State or Central co-operative banks. These would also have the protection of the Guarantee Corporation.

CHAPTER XIV

CO-OPERATIVE MARKETING

In the co-operative marketing structure, there are two types prevalent. A two-tier system with the primary societies at the base and the State society at the apex level is found in Bihar, Madras, Madhya Pradesh, Orissa, Rajasthan and West Bengal and in all the Union Territories except Himachal Pradesh. In some other States a three-tier structure with primary marketing societies at the base, central marketing societies at the district level and the State marketing society as an apex institution is to be found. The set-up of sugarcane supply societies, which, as indicated earlier, form a large majority of marketing societies, is different from other marketing societies. Separate societies at apex level and at central level are found only in Uttar Pradesh and Bihar respectively, while, in all other States, sugarcane societies are organised only at the primary level. The Conference on Marketing and Co-operatives held at Jaipur in 1956 recommended a two-tier structure of co-operative marketing organisation as the normal pattern and federations at the district level were recommended to be organised in any particular region if considered necessary by the State Government.[1] The Dantwala Committee on Co-operative Marketing (1966) also has suggested a two-tier structure, with apex society at the State level and the primary marketing societies at the *mandi* (wholesale market) level.

The apex societies cover the entire area of the respective States, while the central societies cover either a revenue district as in the case of Southern States or a region as in Gujarat. Primary marketing societies are organised generally with jurisdiction co-terminus with administrative divisions like taluk, tehsil or block. In certain areas they are organised on the basis of *mandis* or markets. The Rural Credit Survey Report recommended that

1 Recommendations of the Conference on Marketing and Co-operatives held at Jaipur from 3rd to 5th December, 1956.

the basis of organisation of marketing societies should be either the important *mandis* (wholesale markets) or the taluka centres.[2]

Although co-operative marketing societies are working for a number of years in the country, their position was till recently none-too-happy. The All-India Rural Credit Survey Report observed: "A few—very few—fairly successful co-operative marketing societies do exist in India. Some of them may be significant pointers to the lines on which future progress is possible, but as a present contribution towards bringing about a system in which marketing is by the cultivator and for the cultivator, the part which they occupy in the total picture is wholly insignificant. All the co-operative marketing societies of India put together still fail to catch one's attention as anything important."[3] The Survey data showed that sales to co-operatives were reported in only 12 out of the 75 selected districts. In only four districts, the value of produce sold through co-operatives exceeded 10 per cent of the total sales of the farmers.

Table I indicates the particulars regarding working of marketing societies as at the end of 1957-58 and 1965-66. As on 30th June, 1966, there were 22 State marketing societies and 227 central marketing societies. As a result of the programme of development envisaged under the Second and the Third Plan, there was a significant improvement in the number of primary marketing societies as well as in their financial position. The number of primary marketing societies increased from 9,368 in 1957-58 to 11,269 in 1965-66 with a membership of 48.77 lakh individuals and 141 thousand societies. Of the total number of primary marketing societies as at the end of June, 1966, sugarcane societies numbered 8,071, other specialised commodity societies such as cotton societies, fruits and vegetables societies, etc., 469 and the remaining 2,729 were general purpose marketing societies. The number of individual members brought under the fold of all these co-operative marketing societies steadily moved up from 32.05 lakhs in 1957-58 to 49.33 lakhs in 1965-66. In terms of markets, the general purpose primary societies covered as many

2 Report of the Committee of Direction, All-India Rural Credit Survey, Vol. II—The General Report, Reserve Bank of India (1954), p. 455.

3 All-India Rural Credit Survey, Vol. II—The General Report, *op. cit.*, p. 106.

TABLE I

WORKING OF MARKETING CO-OPERATIVES (INCLUDING SUGARCANE SOCIETIES): 1957-58 AND 1965-66

(*Rs. in thousands*)

Selected items	1957-58 National	1957-58 Apex (State)	1957-58 Central societies	1957-58 Primaries	1965-66 National	1965-66 Apex (State)	1965-66 Central societies	1965-66 Primaries
1. No. of societies	—	16	2,871	9,368	1	22	227	11,269
2. Membership:								
(i) Individuals and others	—	268	23,05,403	8,99,686	—	1.235	54.687	48,77,707
(ii) Societies	—	1,841	58,920	19,478	22	5.800	35.540	1,41,879
3. Paid-up share capital	—	60,55	3.67,82	2,39.57	808	3.66.82	2.01.77	21,28.21
4. Working capital	—	4,42,22	21.21,37	10.07.67	30,71	48.46.99	18,44,90	79,88,98
5. Loans advanced during the year	—	5,22	11,80,09	9,83,92	—	3,16.74	5,10.34	39,39,53
6. Value of sales:								
(i) Agricultural produce:								
as owners	—	1.07.15	16.66.82	6.26.12	1,00,90	61.64,40	7,92.32	39.65.95
as agents	—	3.77,90	48,89.00	17.82,76	—	11.88.05	12,16,29	183.35.22
(ii) Agricultural requisites	—	2.46.80	12.30,49	5,63.68	—	43,04,16	39.06.05	67.26.94
(iii) Consumers goods:								
as owners	—	—	—	—	—	27.30.88	28.34.00	102.69.92
as agents	—	—	—	—	—	10.80.69	2.04,79	11.44.06
7. No. of godowns:								
Owned	—	11	765	462	3	58	2.21	4.098
Rented	—	9	884	1.184	—	1.837	9.07	5.590
8. Government contribution:								
(i) Share capital	—	39,90	33,00	64.76	—	2.76.05	82.18	12.00.31
(ii) Loans for general purposes	—	2.62,48	1,18.23	73.22	—	24.08.69	2.83,10	13.06,29
(iii) Loans and subsidies for construction of godowns, cost of management and other purposes	—	15.62	85.08	63,13	3	3.94.04	59.36	4.63.14

Source: Statistical Statements Relating to the Co-operative Movement in India, 1957-58 and 1965-66.

Note: A decline in the number of central marketing societies is mainly due to reclassification in 1958-59 of a large number of block development unions in Uttar Pradesh and in 1960-61 of taluka purchase and sale unions in Maharashtra and Gujarat.

* Outstandings of loans as at the end of the year. — Denotes not available.

as 91 per cent of the regulated markets and 81 per cent of other markets in 1965-66.

Financial Resources

The total working capital of apex, central and primary societies amounted to Rs. 48.47 crores, Rs. 18.45 crores and 79.89 crores, respectively at the end of June, 1966. The apex societies in Madhya Pradesh, Maharashtra, Uttar Pradesh, Bihar, Rajasthan and Assam stand out separately with working capital exceeding Rs. 1.5 crores per society, while in the rest of the States and Union Territories the quantum of working funds varied from a minimum of Rs. 1 lakh in Delhi to a maximum of Rs. 1 crore in Gujarat. In fact, in Madhya Pradesh it was as high as Rs. 15.81 crores. The average working capital per central society (excluding the central sugarcane societies in Bihar) was the highest in Jammu & Kashmir at Rs. 1.35 crores followed by Kerala with Rs. 30 lakhs. In Andhra Pradesh and Maharashtra it was Rs. 19 lakhs; while in rest of the States and Himachal Pradesh it was less than Rs. 10 lakhs. The disparity in respect of resources among the primary societies (excluding sugarcane societies) is more marked as between various States. The primary societies in Mysore top the list with an average of about Rs. 5.38 lakhs working capital per society. In Gujarat, Jammu & Kashmir, Kerala, Madras, Maharashtra, Orissa, Uttar Pradesh and the Union Territory of Laccadives, the State average is higher than the national average of Rs. 1.99 lakhs per society.[4]

An analysis of the composition of working capital would reveal that the societies, by and large, depend on borrowed funds for raising adequate finance. Consequent on the recommendation of the Rural Credit Survey Report, the State Governments contribute to the share capital of societies and also provide long-term loans for construction of godowns, installation of processing units, etc.

The State contribution to the share capital of all the marketing societies amounted to Rs. 15.60 crores at the end of

4 The financial structure at the primary level is far below the standard suggested by the Dantwala Committee. It is recommended by the Committee that each primary marketing society should have a capital base of about Rs. 2 lakhs. As against this, the average share capital per society is just about Rs. 59,000.

June, 1966. At the apex level, the State had so far participated in the share capital of all except 2 societies. About half the central marketing societies and 70 per cent of the primary marketing societies (excluding sugarcane supply societies) had been provided with share capital contribution by the State Governments. Further, long-term loans for construction of godowns, installation of processing units, etc., amounted to about 50 per cent of the working capital of the apex marketing societies. In the case of primary marketing societies, such loans from Government accounted for about 9 per cent of total working capital in 1965-66.

The marketing societies need short-term credit to finance their marketing and distribution activities. Such short-term credit is obtained largely from the Central co-operative banks. Borrowings from Central co-operative banks accounted for 30 per cent, 19 per cent and 31 per cent of the working capital of apex, central and primary societies, respectively at the end of 1965-66. The Central co-operative banks provided funds for issuing pledge advances, for marketing operations and for distribution activities. These banks in turn, get the funds from the State co-operative banks and from the Reserve Bank of India. The State Bank of India had initiated a scheme for providing working funds to marketing societies to which a reference has been already made in Chapter XIII. At the end of June, 1966, borrowings from the State Bank of India accounted for only 0.2 per cent and 0.8 per cent of working capital of central and primary societies[5] respectively. Only central societies of Andhra Pradesh had borrowed from the State Bank of India while primary societies except those in Assam, Gujarat, Jammu & Kashmir, Madras and Uttar Pradesh and all Union Territories barring those in Delhi, borrowed funds from the State Bank of India.

Working of Societies

The main activities undertaken by marketing societies are: (*a*) sale and purchase of agricultural commodities both as agents and owners, (*b*) undertaking processing activities, (*c*) providing pledge or hypothecation credit and (*d*) distribution of production requisites and consumer goods. The primary marketing socie-

5 Excluding sugarcane supply societies.

ties undertake the marketing of members' produce. The central societies co-ordinate the activities of the primary marketing societies and also undertake distribution activities. The State marketing societies assist in the marketing of crops, distribution of production requisites and certain essential consumer goods and also help in governmental activities.

The magnitude of purchase and sale effected by societies show substantial improvement in 1965-66 over 1957-58. The total value of agricultural produce sold by primary marketing societies including sugarcane societies increased from Rs. 24.09 crores in 1957-58 to Rs. 223.01 crores in 1965-66. Of the total value of sales of agricultural produce, about 67 per cent is accounted for by the sales effected by sugarcane supply societies. Bulk of the sale of sugarcane was accounted for by societies in Uttar Pradesh. The progress of marketing business of the specialised societies and general purpose societies gives a widely differing picture as between different States. Six States, *viz.*, Gujarat, Madhya Pradesh, Maharashtra, Mysore, Uttar Pradesh and West Bengal accounted for 74 per cent of the sale undertaken by marketing societies, Maharashtra leading the list with 25 per cent of total all-India sale. Foodgrains covering paddy, wheat and other foodgrains accounted for more than 58 per cent of sales of agricultural produce of primary societies. The main commercial crops marketed, other than sugarcane, are cotton and arecanut. Cotton marketing societies in Maharashtra, Gujarat, Mysore and Madras, arecanut societies in Mysore and Kerala, tobacco societies in Andhra Pradesh, coconut societies in Kerala and Andaman and Nicobar Islands accounted for a major part of sales of these commercial crops. At the apex level, excluding sugarcane societies, 19 out of 21 societies had undertaken marketing business while at the intermediate level, 38 out of 155 central societies reported no transactions. More than 25 per cent of primary societies did not undertake marketing business during 1965-66.

The two main trading practices followed in marketing transactions are transactions under outright purchase system and under agency system. Under the former the societies make outright purchase and sell either in the same form or after processing at a price generally higher than the purchase price, the risk of fluc-

tuating prices being borne by the societies themselves. The latter system entails transactions on an agency basis, the societies acting as a commission agent between the sellers and buyers. The entire sales of sugarcane societies, both central and primary, were made on an agency basis in all States except in Punjab where at the primary level insignificant portion of the total sales was reported on ownership basis. In respect of the remaining societies, sales as owners accounted for a major part of the total in the case of central societies while sales on agency basis were more important at the primary level.

One of the reasons given for the rather slow progress of marketing co-operatives is that they are not able to purchase on a cash basis, like a private trader, agricultural produce offered for sale. Under the prevalent practice, outright purchases only up to a prescribed level usually fixed in the bye-laws of societies are permitted mainly because of risk of loss involved due to fluctuations in agricultural prices. Outright purchases are limited to an amount equal to the owned funds of societies. Fixing up this limit curtails to a very large extent the scope of the societies to augment marketing operations. The Conferences of State Ministers of Co-operation held in 1961 and in 1963 considered the question of augmenting the scale of operations under outright purchase system. The main recommendation of the Conference (1963) was the creation of a special fund in each State for meeting losses arising out of outright purchase system. Accordingly, during 1964-65 a Price Fluctuation Fund scheme was introduced in 200 selected societies. Under the scheme, each selected society created a price fluctuation fund and contributed to it at the rate of 10 per cent of its net profit every year. Government's contribution to this fund was fixed at 2 per cent of the value of outright purchases of agricultural produce made by the societies in the preceding year subject to a ceiling of Rs. 20,000 for each selected primary marketing society, Rs. 1 lakh for regional or apex marketing society and Rs. 2.5 lakhs for the National Co-operative Marketing Federation. Government's contribution is shared by the Centre and the States on 50 : 50 basis. Later in 1966-67, Government's contribution to the Price Fluctuation Fund was raised from 2 per cent of the value of outright purchase of agricultural produce to 5 per cent if the

fluctuations in the prices of these commodities are relatively high and if the commodities are exported. It was also decided that there will not be any ceiling in respect of Government contribution to the Price Fluctuation Fund with the individual marketing/processing society. By the end of June, 1966, the Price Fluctuation Fund was in operation in about 500 societies. Besides this Fund, it was proposed to create a Special Price Fluctuation Fund out of Government contribution in every primary marketing/processing co-operative. This Special Price Fluctuation Fund is to form part of the owned funds of the primary society but is not to be utilised in its business. Both funds are to bear on an equal basis the losses arising out of transactions of outright purchases made either for internal trade or for export trade. In this connection, the role of co-operatives at different levels in making outright purchases has been redefined in such a way that the apex marketing societies and other higher level marketing organisations will make outright purchases on a bigger scale than hitherto and, consequently, be the risk-bearers while the primaries will act as their agents but may make outright purchases only under special circumstances. Hence, the ratio of sharing losses between Price Fluctuation Fund and Special Price Fluctuation Fund has been kept at 50 : 50 in the primaries while in respect of marketing/processing co-operatives at the regional, State and national levels, no such ratios of sharing losses would be applicable.

The quantum of marketing transactions depend, among other things, also on the capacity of the societies to arrange for sale at competitive prices. In this respect, the societies at the central and the State level have a dominant role to play but in actual operation these societies do not undertake the operations in a co-ordinated manner. Most of the societies function in isolation and the co-ordination is generally confined to the distribution of fertilizers only.

The marketing societies also undertake credit operations which are chiefly confined to supply of short-term accommodation against the security of produce to producer-members to enable them to hold back the produce with a view to selling it at a favourable price later in the season. In addition, the societies also provide loans for current agricultural purposes and processing acti-

vities. The total quantum of advance issued by primary marketing societies to individuals was of the order of Rs. 25 crores during 1965-66. About 55 per cent of the loans were issued to individuals against pledge of produce.[6] At the all-India level, about 36 per cent of primary marketing societies undertook credit operation. This proportion is the highest in Uttar Pradesh with 85 per cent of societies granting advances. The proportion is cent per cent in Pondicherry where all the 3 existing societies reported credit operation. Pledge loans which are one of the major activities of the societies are advanced up to 75 per cent of the market value of produce for a period of 6 to 9 months. The limit up to which individuals could borrow pledge loans is fixed generally at an amount varying from Rs. 2,000 to Rs. 5,000. Apart from pledge loans, the societies also provide short-term production credit which both in its nature and operation varies from State to State.

Although undertaking of processing activities is one of the main functions of marketing societies the progress made in this respect by them is not very satisfactory. Over the period 1959-60 to 1965-66 the number of marketing societies undertaking processing had gone up from 65 to 307 of which 296 were primary societies. These societies undertook processing of cotton, oilseeds, paddy, etc. They are spread over practically all the States and also in Andaman and Nicobar Islands and Pondicherry. At the central level, 10 societies that undertook processing of coconut, oilseeds and paddy are in Andhra Pradesh, Maharashtra, Mysore, Gujarat and Kerala. The cotton marketing societies at the primary level in Gujarat and Maharashtra have successfully undertaken processing of cotton like ginning and pressing before it is marketed. Considerable assistance by way of share capital contribution and long-term loans provided by the State Governments to marketing co-operatives had enabled them to install processing units. However, such assistance does not cover the entire cost of installing a unit.

Creation of adequate storage capacity is one of the important

6 In view of the fact that the provision of pledge credit by marketing co-operatives may tend to adversely affect the arrival of foodgrains in the market, the State Governments were requested by the National Co-operative Development Corporation in October, 1965 to advise the marketing co-operatives to refrain from granting loans against the pledge of foodgrains.

factors contributing to the development of co-operative marketing. The available data in respect of marketing societies other than those dealing in sugarcane indicate steady increase in number of both owned and hired godowns at apex, central and primary levels. The proportion of societies having owned godowns works out to 67 per cent at the apex level and 60 per cent at the central and primary level. The growth in the construction of godowns in the case of primary marketing societies is largely due to the increased financial assistance provided by the Government under the Plan schemes. Loans repayable over a period of 15 years and subsidies are provided by Government.

One of the important functions of the societies is distribution of production requisites like fertilizers, manures and agricultural implements and consumer goods like sugar, rice, kerosene, etc. The value of agricultural requisites distributed by the primary societies including sugarcane supply societies increased from Rs. 5.7 crores in 1957-58 to Rs. 67.3 crores in 1965-66. The value of fertilizers distributed amounted to Rs. 46.5 crores in 1965-66 or 69 per cent of the total agricultural requisites sold. Bulk of the fertilizers distributed was accounted for by the societies other than sugarcane societies in 1965-66. The distribution of chemical fertilizers entrusted either on a monopoly basis or on a preferential basis with co-operative organisations is the main contributory factor for the growing volume of distribution operation. Complete monopoly of distribution of straight chemical fertilizers was entrusted with co-operative marketing societies in the States of Andhra Pradesh, Bihar, Gujarat, Jammu & Kashmir, Maharashtra, Madhya Pradesh, Madras, Mysore, Orissa and Punjab. In the sphere of distribution, greater degree of operational inter-relationship is discernible between primaries, central and apex societies resulting from routing the supplies either through the apex societies as in Gujarat and Punjab or through district societies as in Maharashtra and Andhra Pradesh. The system of distribution being controlled at various levels, the co-operative marketing societies are ensured of a fair level of margin. The Central co-operative banks provide necessary accommodation to finance the distribution work. Apart from controlled fertilizers, the societies also undertook purchase and sale, mostly under outright purchase system, of other fertilizers and manure

mixtures. Under consumer goods, the most important items sold are sugar and rice.

Interlinking of Credit with Marketing

Linking of credit operation of the co-operative credit societies with marketing transactions of the marketing societies is one of the basic features of the Integrated Scheme of Rural Credit. During the period 1959-60 to 1965-66, the number of primary marketing societies which recovered loans of credit societies by marketing of produce of members of credit societies increased from 213 to 525. The quantum of loans recovered by the societies on behalf of credit societies however is not significant. Out of about Rs. 427 crores outstanding to primary agricultural credit societies during 1965-66, only Rs. 12.2 crores were recovered by the marketing societies through sale proceeds of members. Further, the progress is unevenly spread out in different States. It is observed that the State of Punjab as also all the Union Territories, except Tripura had not made any progress at all in implementing the interlinking arrangement, while the States like Madhya Pradesh, Maharashtra, Uttar Pradesh, Madras, Mysore and Jammu & Kashmir had made comparatively good progress. The low level of marketing transactions, inadequate financial resources and absence of proper inducements are some of the factors that retard the progress of interlinking arrangement.

Successful functioning of marketing societies depends as much on efficient management as on other contributory factors like adequate financial resources. In fact, managerial efficiency holds the key to better performance. With a view to providing adequate trained staff to manage the societies, State Governments under the Plan schemes provide financial assistance by way of managerial subsidy to the societies. Although such subsidies account for a very small proportion of cost of management of societies, they provided some inducements for the societies to have trained managers. The managing committees which control and guide the functioning of societies are, in some cases, dominated either by trader elements or urban-oriented interests. Indiscriminate granting of pledge loans, organising traders' ring within the societies, misuse of office, indulging in malpractices and embezzlement of funds and unresponsiveness to departmental guidance

are some of the unsatisfactory factors observed in the management of societies. Strict supervision and adequate guidance by the department would go a long way to improve the efficiency of management.

CO-OPERATIVE PROCESSING

Processing is an integral part of marketing. The programme of development under the Second and Third Five-Year Plans placed great emphasis on co-operative processing. During the Second Plan period, good progress was recorded in setting up co-operative processing units. The number of co-operative cotton ginning and pressing units increased from 76 in 1957-58 to 155 in 1965-66 while the number of other processing units was 8.442 in 1962-63 and 1894 in 1965-66.[7]

The Plan period also witnessed an increase in the number of co-operative sugar factories. As against 3 co-operative sugar factories in 1955-56, there were as many as 55 at the end of March, 1967 which had commenced production and 21 more units, which were licensed, were under construction. The present policy of the Government in the expansion of sugar production is to encourage the establishment of sugar mills on co-operative basis by giving them preference in granting licences. As at the end of March, 1967, about one-third of the total licensed capacity for sugar production was with the co-operative sector and the co-operative sugar mills accounted for 27 per cent of the production in the country as against only 8 per cent in 1957-58.

A large number of sugar co-operatives is concentrated in Maharashtra. This State also accounts for more than half of the total production of sugar by co-operatives in the country.

The initial cost of establishing a factory is partly met by share capital contributed by the members who are mostly cane producers and other co-operative institutions and the State Government. By the end of June, 1966, the sugar co-operatives together had built up a share capital base of Rs. 30.26 crores of which 36 per cent was contributed by the State Governments. A major

7 The number of other processing units for 1962-63 refers to those which had both growers and non-growers as members, while the same for 1965-66 refers only to those which had growers as members.

part of the capital cost is financed by the Industrial Finance Corporation through long-term loans up to 65 per cent of the cost, subject to a maximum of Rs. 90 lakhs per factory. The total loans sanctioned by the Industrial Finance Corporation since its inception up to March, 1967 to co-operative sugar factories amounted to Rs. 40.98 crores of which Rs. 25 crores were outstanding. Valuable assistance is rendered by the State Bank of India by way of short-term interim advances, letters of credit for import of machinery, etc. Outstandings of the loan given to co-operative sugar factories by the State Bank of India amounted to Rs. 4.24 crores at the end of March, 1967. Working capital requirements of sugar co-operatives are met through loans from the central financing agencies.

WAREHOUSING AND STORAGE

Adequate storage facilities is one of the pre-conditions of orderly marketing system. Till recently, storage arrangements in the country were both inadequate and unscientific. Realising this situation, the All-India Rural Credit Survey Committee made detailed recommendations in 1954 incorporating even proposals for an organisational framework for initiating a country-wide programme of warehousing development. With a view to promoting a programme of activity in these directions, the Agricultural Produce (Development and Warehousing) Corporations Act was passed in June, 1956 providing for the establishment of a National Co-operative Development and Warehousing Board, a Central Warehousing Corporation at the all-India level and a State Warehousing Corporation in each State. Accordingly, the Board was set up on September 1, 1956 and the Central Warehousing Corporation came into being on March 2, 1957. In regard to State Warehousing Corporations, a beginning was made in 1956-57 in Bihar and by 1959-60 all the States had set up their warehousing corporations.

The main function of the National Co-operative Development and Warehousing Board was to promote the planned development of the co-operative processing and marketing of agricultural commodities and facilities for the storage and warehousing of such commodities. As the primary responsibility for developing co-operatives rests with the State Governments, the Board did not

deal directly with co-operatives but provided assistance to State Governments which in turn supported the co-operatives. For this purpose, the Board had set up (*a*) the National Co-operative Development Fund and (*b*) the National Warehousing Development Fund. The National Co-operative Development Fund was utilised for advancing loans and granting subsidies to State Governments to enable them to subscribe to the share capital of co-operative societies or for otherwise financing co-operative societies. The National Warehousing Development Fund was applied for (i) subscribing to the share capital of the Central Warehousing Corporation, (ii) advancing loans to State Governments for enabling them to subscribe to the share capital of State Warehousing Corporations and (iii) advancing loans and granting subsidies to a Warehousing Corporation or to State Governments for promoting the warehousing and storage of agricultural produce.

The National Co-operative Development Corporation was established in March, 1963 in place of the National Co-operative Development and Warehousing Board, mainly for administrative convenience. The new Corporation will continue to perform more or less the same functions as the erstwhile Board except that it will cease to be a shareholder in the Central Warehousing Corporation. All the shares held by the former Board in the Central Warehousing Corporation and all liabilities as to the payment of unpaid calls on such shares stand transferred to the Central Government. The Warehousing Fund which was administered by the Board has been transferred to and will be maintained by the Central Warehousing Corporation.

Since its inception in March, 1963, the National Co-operative Development Corporation is playing an important role in planning, promoting and assisting programmes of production, processing, marketing, storage, export and import of agricultural produce and notified commodities through co-operative societies. It has appointed Functional Committees on co-operative agricultural credit, marketing, supplies and storage, co-operative agricultural processing and co-operative consumers' stores. During 1966-67, the Corporation provided financial assistance amounting to Rs. 17.40 crores, Rs. 15.87 crores as loan and Rs. 1.52 crores as subsidy, the details of which are given in Table II. The total

TABLE II

LOAN ASSISTANCE PROVIDED BY THE NATIONAL CO-OPERATIVE DEVELOPMENT CORPORATION: 1966-67

(*Rs. in lakhs*)

Purpose	Amount advanced during the year April, 1966 to March, 1967	Amount outstanding at the end of March, 1967
(1)	(2)	(3)
I. Share capital contribution to co-operatives	1,26	
II. Construction of godowns	1,75	
III. Establishment of cold storages	1,36	
IV. Cash credit accommodation to wholesale consumers' co-operatives	—	
V. Purchase of transport vehicles by consumers' co-operatives	—	
VI. Purchase of transport vehicles by marketing/processing societies	13	
VII. Share capital contribution to co-operative modern rice mills	—	
VIII. Construction of godowns and silos of co-operative modern rice mills	—	47,32
IX. Co-operative rice mill (conventional)	1,37	
X. Loans for strengthening of agricultural credit stabilisation funds of State co-operative banks	6,78	
XI. Loans for establishment of formulation units of insecticides/pesticides by marketing societies	7	
XII. Loans for organisation of seed producers—processing cum-sale societies	7	
XIII. Loans for establishment of units for fabrication of agricultural implements by marketing societies	4	
XIV. Loans for establishment of processing units	3,04	
XV. Investment in debentures of central land mortgage banks	—	92
	15,87	

Source: Report on Currency and Finance for the Year 1966-67, Reserve Bank of India (1967).

financial assistance granted by the Corporation since its inception till March, 1967 amounted to about Rs. 81 crores.

One of the main functions of the Central Warehousing Corporation is to acquire and build godowns and warehouses at suitable places of all-India importance and to run warehouses for the storage of agricultural produce. The functions of the State Warehousing Corporation are intended to be complementary to those of the Central Warehousing Corporation. The progress made by the Central and State Warehousing Corporations in developing warehouses in the country is given in Table III.

The Central and State Warehousing Corporations together had set up 707 warehouses by the end of March, 1967. These centres had a storage capacity of 11.65 lakh tonnes. Of the 7.26 lakh tonnes of commodities which were stored in these warehouses, about 19 per cent belonged to co-operatives and producers, 46 per cent to traders and 35 per cent to Government and Government sponsored organisations like the Food Corporation of India. The share of producers and co-operatives in the utilisation of warehousing capacity has risen from 7 per cent in 1964-65 to 19 per cent in 1966-67.

With the widespread network of warehouses, it has now become possible to provide warehousing facilities for large scale storage of as many as 120 commodities. Further, there has been an increase of utilisation of the capacity for cash crops, from 17 per cent of private deposits in 1960-61 to 25 per cent in 1966-67, indicating that the scientific methods of storage are more and more appreciated. Besides, the Central warehouses handle large stock of fertilizers on behalf of the Government so as to facilitate easy distribution. There has also been close co-ordination between the Central Warehousing Corporation and the Food Corporation of India. Further, it has been possible for the cultivators to deposit their produce in the warehouse and raise finance on the security of warehouse receipt. Although the warehouse receipt is not as yet a fully negotiable instrument, its popularity as an instrument of credit is steadily gaining ground. Outstanding advances against receipts of the Central and State Warehousing Corporations amounted to over Rs. 28 crores at the end of March, 1967 as against only Rs. 2 crores

TABLE III

NUMBER AND CAPACITY OF CENTRAL AND STATE WAREHOUSES

Year	Central warehouses				State warehouses		
	Number of warehouses		Storage capacity (lakh metric tonnes)		Number of warehouses* set up	Storage capacity (lakh metric tonnes)	
	Target	Achievement	Total	Utilised§		Total	Utilised§
(As on March 31)							
1957-58 } 1958-59 }	9	10	N.A.	N.A.	42	0.16	N.A.
1959-60	19	27	0.48	0.20	147	1.39	N.A.
1960-61	40	40	0.79	0.50	266	2.78	1.77
1961-62	60	60	1.23	0.86	373	3.96	2.61
1962-63	77	78	1.80	1.25	503	4.32	2.87
1963-64	84	83	1.78	0.93	522	4.69	2.83
1964-65	89	85	2.06	1.09	537	5.61	3.32
1965-66†	101	100	3.04	2.65	570	8.81	5.80
1966-67†	101	100	3.12	2.44	607	8.53	4.82

Source: Annual Reports of the Central Warehousing Corporation.

§ That is stocks held on March 31.
* Including sub-warehouses and one cold storage.
† Figures include those relating to special warehouses.
N.A. = Not available.
Note: Figures for 1966-67 are provisional.

at the end of March, 1961. As the number of warehouses and stocks held are progressively increasing, the advances in 1966-67 would have been much more than the present level but for the curbs imposed by the Reserve Bank of India on advances against warehouse receipts covering certain foodgrains. With the necessary amendment in the Indian Contract Act as recommended by the Law Commission, the warehouse receipt would be an effective instrument for raising credit in the future.

Thus, the developments in the preceding decade considerably improved the conditions in agricultural markets in India. Already half the number of important markets have been regulated. Statewise distribution of these regulated markets is given in Table IV. Regulation of markets has conferred considerable benefit on the cultivators. Simultaneously, a programme of deve-

TABLE IV

NUMBER OF REGULATED MARKETS IN INDIA AS ON MARCH 31, 1967

S. No.	State/Union Territory	Principal markets	Sub-markets	Total
1.	Andhra Pradesh	116	7	123
2.	Bihar	60	81	141
3.	Gujarat	113	86	199
4.	Kerala	5	—	5
5.	Madhya Pradesh	132	13	145
6.	Madras	84	—	84
7.	Maharashtra	237	102	339
8.	Mysore	89	66	155
9.	Orissa	26	17	43
10.	Punjab	85	244	329
11.	Haryana	57	—	57
12.	Chandigarh	1	—	1
13.	Rajasthan	89	42	131
14.	Tripura	1	—	1
15.	Delhi	3	—	3
16.	Uttar Pradesh	3	3	6
17.	Himachal Pradesh	3	—	3
	Total	1,104	661	1,765

lopment of co-operative marketing also proceeded apace. Almost all important agricultural markets have been covered by the marketing co-operatives. Processing and storage facilities also received due attention. A number of co-operative processing units have come up. Warehouses have also been constructed in important marketing centres. This allround development in respect of regulation of markets, co-operative marketing and processing and warehousing facilities during the last decade created favourable conditions for the producer to dispose of his crop without much exploitation.

Notwithstanding these achievements, it cannot be gainsaid that much leeway is yet to be made. Not in all cases is the regulation of markets as effective as is necessary to protect the interests of the producer. Further, regulation of markets is still undeveloped in some States such as West Bengal, Uttar Pradesh and Bihar. The inadequate pace of development is rather conspicuous in co-operative marketing.

According to the All-India Rural Debt and Investment Survey, 1961-62, the value of receipts by cultivator households from sale of agricultural produce amounted to Rs. 2,250 crores. As against this, the value of agricultural produce handled by the primary marketing societies including sugarcane societies amounted to Rs. 59.9 crores in 1961-62 or about 2.6 per cent of the trade. Since then, the share of co-operative marketing may have increased due in part to the monopoly procurement of foodgrains through co-operatives initiated in certain States. Similarly, the establishment of the Food Corporation of India and its engaging of co-operatives for procurement operations may have increased the relative importance of co-operatives. Further, the Foodgrains Policy Committee which reviewed the existing regulations and systems regarding procurement and distribution in the country recommended in 1966 that the Food Corporation should appoint co-operatives as its agents in certain cases or, in other circumstances, be itself the agent of co-operatives depending on the procurement arrangements of the particular State.

The progress in respect of interlinking of credit with marketing is considerably slow due in part to little co-ordination be-

tween marketing and credit societies and in part due to actual competition between them. This is because credit societies undertake marketing business and marketing societies provide production credit. To avoid competition and ensure co-ordination between the two wings of the co-operative movement, it is necessary that the primary credit societies in the area of marketing societies should be affiliated to the latter. The Dantwala Committee on Co-operative Marketing (1966) has also emphasized the necessity of such affiliation and suggested that this should be ensured by making necessary provision in the bye-laws of both types of societies.

If the marketing societies are to serve the small producers, they should be prepared to make outright purchases. This is necessary as otherwise, the objective of marketing societies, *viz.*, facilitating profitable sale by small cultivators may be thwarted. Further, to compete with the traders who provide several facilities to induce cultivators to make sales to them, the marketing societies should assemble produce at the village level. The marketing societies should also establish processing units as an adjunct to the normal market operations.

The marketing societies are found to divert their meagre resources for undertaking supply activities, often at the cost of their marketing and pledge business. However, since both marketing and distribution are the legitimate functions of these societies, they should try to achieve a balance in the allocation of their resources between these two functions.

The Draft Outline of the Fourth Plan lays emphasis on strengthening the co-operative marketing structure. Setting up of 450 new primary marketing societies is proposed such that every important marketing centre in the country is served by a co-operative marketing society. Besides, various schemes such as the one for establishing technical cells in apex marketing societies, creation of a pool of key marketing personnel, establishment of price fluctuation funds in marketing societies to safeguard against losses arising from outright purchases and further strengthening of share capital of marketing societies have also been initiated. Strengthening of marketing societies is necessary because co-operative marketing and processing which is intimately linked with

marketing are the weak areas in co-operative organisation even where it is well developed. As for processing except in regard to sugarcane and cotton, much remains yet to be done in the field of co-operative processing for other commodities.

THE COMMITTEE ON CO-OPERATIVE MARKETING

In August, 1964 a Committee on Co-operative Marketing was appointed under the Chairmanship of Prof. M. L. Dantwala. The Committee was to review the present pattern of co-operative marketing of agricultural produce, etc., and indicate the future pattern of their development, in the integrated structure of credit, supplies and processing. The Committee submitted its report in 1966. While reviewing the development of co-operative marketing during the Plan period it has stated that the growth has been striking in terms of the number of co-operative marketing societies and coverage of *mandis* by them. However, the actual number of villages covered and the number of cultivators brought within their fold were very limited. Besides, these societies were largely preoccupied with distribution activities. Linking of credit with marketing had made little progress. Further the impact made by these societies on the private trade in agricultural commodities was insignificant, except in a few cases. Although the performance of these societies was not up to expectations, the Committee has stressed the need for development of marketing co-operatives and recommended several measures for this purpose.

Regarding the structure of marketing co-operatives, the Committee has advocated a two-tier structure for marketing co-operatives: primary marketing societies at the *mandi* level and the apex marketing societies at the State level. Though the existing district level societies may be allowed to continue, gradual divestation of those functions that legitimately belonged to primary societies has been suggested. In future, it has stated, branches of the apex society may be organised at district/regional level.

Primary general purpose marketing societies at *mandi* level should, in the opinion of the Committee, handle all the commodities grown in their area of operation. If in any area, production of a particular crop is concentrated, a society to exclusively handle the marketing of that crop can be organised. Distribution of agri-

cultural inputs in the area of operation of the latter type of society as also co-operative processing societies is, however, to be done by the general purpose society only. Processing units not involving substantial outlay are to be set up by marketing societies as adjuncts. Separate marketing-cum-processing society may be organised only if it is likely to prove viable.

According to the Committee, primary marketing societies should affiliate all the agricultural credit/service societies in their area of operation and forge a link with them. They may draw membership from individual members till the affiliated credit societies become strong units covering the entire agricultural community and capable of undertaking assembling, grading and pooling of produce.

The individual producer-members and the agricultural credit societies should, according to the Committee, have a certain minimum representation on the managing committee of primary marketing societies. Representation to Government on the management should be reduced to the minimum. At the apex and district levels also representation to different types of societies should be provided for. Further, the Committee has suggested that with a view to avoiding traders coming on the management of societies, only those producer-members who had sold a sizable part of their marketable surplus through co-operatives in the preceding two years should be eligible for election to the management of primary marketing societies. The creation of a common managerial cadre for marketing societies in each State has also been recommended.

In the Committee's view an average primary marketing society, to have reasonable turnover of business, will need a capital base of Rs. 2 lakhs. Half of this may be subscribed by credit societies and individual members and the remaining half by Government on a matching basis. It has also suggested that deposits with marketing societies may be increased by setting up a 'revolving fund.' This fund will be built up by each member allowing the society to retain a part of his sale proceeds and other amounts due to him in it as deposits.

To enable marketing societies to borrow adequately to meet their needs, the Committee has suggested the enhancement of maxi-

mum borrowing limits wherever necessary. Further, the State Bank of India should accord priority to credit requirements of the marketing structure. To enable it to do so, the Committee has stated that it should be allowed to avail additional funds from the Reserve Bank of India at Bank rate to meet the needs of the societies in areas of intensive agricultural production. Besides, Government should also explore the possibilities of augmenting the resources of the State Bank out of PL 480 funds. Primary marketing societies should be allowed to borrow from the State Bank with the concurrence of either the Registrar or the State co-operative bank. Further, the Reserve Bank should relax its directives and permit the Central co-operative banks to grant, in deserving cases, clean cash credit limit up to two times the owned funds of marketing societies. Subject to precautions to be taken and after ensuring that the amount does not exceed the owned funds, marketing societies should extend 'trade credit' wherever it is in vogue. Trade credit so extended should be eligible for refinance from the Reserve Bank. On the analogy of the scheme of financing industrial co-operatives by the Central co-operative banks, the Central and State Governments may bear a portion of the losses arising out of non-recovery of loans granted to marketing societies. Further, to induce co-operative banks to enlarge their financing of marketing societies the setting up of a 'special marketing finance fund' on the lines of the 'special bad debt reserve fund' has been suggested. The fund is to be built up by contributions from apex and Central co-operative banks and the marketing societies. The Committee has recommended that the provision regarding statutory first charge of some State Governments over assets of co-operative societies, in respect of the amounts due to Government, should be re-examined since it stands in the way of marketing societies securing adequate finance. Besides, the Committee has suggested that State Governments may assist deserving societies by standing guarantee for their borrowing, in pursuance of an accepted economic policy, against default and not only of loss.

The Committee has advocated a systematic campaign for the acceptance of the practice of sale of produce by members after grading, pooling and bulking and if necessary processing. For this purpose, the marketing societies are advised to undertake grading

and processing even in regard to their sales as agents. It has advocated the continuation of the scheme of outright purchases and its extension to all good working societies. Societies selected under the scheme of outright purchases as also those selected for procurement of foodgrains should grade produce before sale. State Governments should extend adequate facilities for grading, at a nominal cost, to marketing societies. Further, marketing societies should be permitted to make outright purchases from producers either directly or through credit societies both at the village level and at the *mandi*, even in areas coming under the purview of regulated markets.

After pointing out that the first pre-requisite for effective linking of co-operative credit with co-operative marketing is the availability of credit, based on realistic estimates and in time, the Committee has recommended that instead of obtaining lengthy agreements from borrowers about linking, a suitable provision in the bye-laws of co-operatives and also in the Co-operative Societies Act can be made to enforce such marketing contracts. Further, besides the legal provision regarding the creation of a first charge on crops of borrower-members in favour of agricultural credit societies, it has considered it desirable to make a suitable provision in the Acts to compel the buyers of such crops to recover the dues to the co-operatives from the sale proceeds.

Discussing the relationship between marketing and credit co-operatives, the Committee has recommended that primary marketing co-operatives should operate to the maximum extent through village co-operatives. Similar co-ordination of efforts by the district/regional and apex marketing societies have been recommended. The apex societies should, according to the Committee, increasingly undertake on behalf of their affiliates activities, such as establishment of processing units, manufacturing units and provision of technical guidance. However, wherever agricultural credit societies are either non-existent or not capable of advancing credit, the Committee has recommended that, as an interim measure, the marketing societies may be permitted to dispense credit also.

In any procurement/purchase scheme undertaken by Governments, the apex marketing societies should, according to the Com-

mittee, get positive preference for appointment as agent. Marketing societies working on behalf of Government should obtain produce directly from producers only. However, marketing co-operatives are not to associate themselves with enforcement functions under State procurement schemes.

In the field of distribution, the Committee has recommended that State Governments should either supply fertilizers to marketing societies on a consignment basis or make suitable arrangements to enable marketing societies to obtain stocks of fertilizer on credit for 6 to 8 months as recommended by the Committee on Fertilizers (1965). In regard to insecticides/pesticides/agricultural implements, State Governments are to supply them to apex marketing societies on a consignment basis, which in its turn should extend similar facilities to primary marketing societies. The primary credit societies are to purchase seeds/pesticides/insecticides/agricultural implements outright from the marketing societies with provision for return on unsold stock. The village credit societies should undertake distribution of consumer goods as part of their service functions.

The Committee has stressed the pivotal role of the National Co-operative Development Corporation in so far as the development of co-operative marketing, processing, storage and supplies is concerned. For this purpose it has recommended that the Corporation should be given the entire assistance for financing the schemes included in the Plan by way of grants each year for the next five years. This, according to the Committee, will enable the Corporation to promote schemes of its own without Government aid by adopting a flexible policy to suit regional and individual needs.

PART IV

CHAPTER XV

AGRICULTURAL TAXATION

LAND REVENUE

Ancient and Mediaeval Systems

Only a brief mention may be made here of the pre-British land revenue system.[1] It is well known that under the ancient Hindu kings, Government demand by way of land revenue was usually one-sixth of the produce, paid usually in kind but in some cases in cash. The early Muslim rulers did not introduce any change in the system and the old "village communities" continued to function through the ages right up to the advent of the British. Ala-ud-din Khilji raised the Government's share to half the gross produce. The Tughluqs again reduced it to one-tenth or one-eleventh of the gross produce, and injunctions were issued to Revenue Officers that they should look more to the extension of cultivation than to the enhancement of the rate for increase in revenue. To Sher Shah belongs the credit of having introduced the system of measurement as the basis of assessment in place of the old system of sharing the crop. Lands were classified, standard yields assessed and the revenue demand fixed at one-third of the average on all classes of land. Sher Shah's reforms became the basis of Akbar's land revenue policy and administration, with the difference that Akbar proceeded to convert the grain rates assessed by Sher Shah into cash rates based on the average prices prevailing in different places. In the later days of the Moghul Empire, the State's claim was increased to one-half of the gross produce. The Peshwas accepted the basis of this old assessment, but with the weakening of the central power and the political unsettlement of the period, there developed in different parts of India a system of revenue farming which ensured to the rulers a steady income without the bother

1 This section is based on Radhakumud Mukerjee's "Note on the Indian Land System" in the Report of the Land Revenue Commission, Bengal, Vol. II (1940).

of assessment, collection and administration. At first, these revenue farmers were not hereditary; they were just public officials, but the centrifugal tendencies of the time greatly strengthened their position and weakened correspondingly the position of the agriculturists. In course of time, there developed a complexity of tenures and revenue systems which made the task of the early British officials very difficult.

The different systems of settlements that have evolved in India can be broadly classified into (i) permanent or those in which assessment was fixed in perpetuity, (ii) temporary or those in which assessment was fixed for a definite period. They can also be classified on the basis of tenures as (i) Zamindari in which assessment was fixed on an estate held only by a landlord, (ii) Mahalwari in which assessment was fixed on a village or mahal jointly or severally, and (iii) Ryotwari in which assessment was fixed on the holding of a ryot.

Assessment under Permanent Settlement

The principle underlying the assessment in Bengal, Bihar and Orissa was obviously that the State was entitled to the entire rental, except the expenses which would have to be incurred by the zamindars and a small margin as his profit. It was on this understanding that the State claimed nine-tenths or ten-elevenths of the rental, leaving the remainder to be taken by the zamindar as a surplus for himself. The revenue demand for Bengal, Bihar and Orissa was fixed at Rs. 268 lakhs in 1765.

The amount of land revenue thus fixed with reference primarily to the needs of the East India Company was also determined so as "to include in advance the cash value of future agricultural developments of the country and to take credit in the present for the unearned increments of the future."[2] For several years after the settlement, there was widespread default in payment, and many landlords were compelled to sell their estates. In course of time, however, as uncultivated lands were brought under the plough and the value of land increased, the assessment became relatively lighter. At the same time, it also

2 Radhakumud Mukerjee, *op. cit.*, pp. 219-221.

became more unequal. "The increment in the value in an estate which was largely undeveloped at the time of the settlement may be many times that which accrued in one which was fully developed when the settlement was made."[3]

Assessment under Temporary Settlement

The method of assessment under the periodical settlement system is almost uniform. An area for which a settlement is undertaken is cadastrally surveyed and classified according to the fertility of soil. The rate of revenue is then worked out by calculating the yield of the principal crops, by noting the price of the agricultural produce, the rental and sale value of the land and the ordinary expenses of cultivation. Other factors such as physical configuration, climate and rainfall, proximity to markets, means of communications and standard of husbandry are also taken into consideration in the determination of the assessment at the time of the settlement. The assessment so determined is fixed for a term of years varying from 15 to 40 years. The usual period is 30 years. When a revision of the settlements becomes due, the various changes that have occurred since the last settlement in (i) the area of the land and holdings and (ii) the price and yields of agricultural produce, are taken into consideration.

Assessment under Ryotwari

The ryotwari system of assessment can be illustrated by the position in Madras which as modified, continued up to the period of recent reform. There are two principles that govern the processes of settlement in Madras.[4] The first is that assessment is on the land and does not depend on the kind of crops grown, except in the case of "wet" land, where it includes a charge for irrigation. The soil is first classified according to productive capacity, the normal yield is calculated on each class of soil after a series of experiments, and this is then converted into money value, not at the current rates which may be abnormal, but at the average of prices prevailing during the preceding 20 years, excluding famine years. The second principle relates to

3 Report of the Indian Taxation Enquiry Committee 1924-25, Vol. I (1926), pp. 42-43.

4 Report of the Land Revenue Commission, Bengal, Vol. I, *op. cit.*, p. 124, *ff*.

the estimation of the net profit of each cultivator. To obtain this, various deductions are made from the gross produce, so as to allow for seasonal variations, unproductive areas, cost of cultivation, etc. Of the net profit thus arrived at, 50 per cent is claimed as the maximum Government share. In practice, the revenue demand is often less, the 50 per cent rule applying only to land enjoying the greatest natural advantages. At the time of resettlement after 30 years, no change in basic principles is made. An enhancement in Government demand is made if there has been a rise in prices during the interval. Government claims no share of the increase in profits due to the improvements made by the cultivator himself, but it does claim a share in the profits due to some general improvement due, for example, to the introduction of a railway.

In Bombay, in the early stages of British rule, temporary settlements were first tried. Regular Survey Settlements were commenced in 1824-28, but ended in failure. The Government's share was fixed at 55 per cent of the produce. This proved oppressive. A resurvey was commenced in 1835. Lands were classified into nine different classes according to their quality, and settlements were made directly with the ryots. The assessment was fixed without any reference to the cultivator; and when those rates were introduced, the holder of each field was summoned by the Collector and informed of the rate at which his land would be assessed in future; and if he chose to retain it on those terms, he did; if he did not choose, he threw it up.[5] This settlement was made for 30 years. Before the expiry of the first thirty years' settlement, the issue of introducing a Permanent Settlement in Bombay was taken up but was however decided against. As the prices of the produce were then rising, the Government looked forward to a proportionate increase in the land revenue at the next settlement. To the indebted peasantry, the revised settlement meant additional hardship which was one of the causes of the Deccan Riots of 1875. Besides the other measures of relief provided for the peasantry, the most significant step was the enactment of the Bombay Land Revenue Code of 1879.

5. Evidence of Goldfinch, Fourth Report of the Commons' Select Committee 1853, quoted by R. C. Dutt: Economic History of India in the Victorian Age (1903), Seventh Edition, 1950, p. 53.

Under this Code, revenue on land was assessed according to the purpose for which the land was used, whether it was agriculture, or building or some other purpose. The rate of assessment was arrived at empirically with reference to general economic considerations, and in practice was based on the actual rents paid rather than on any theoretical considerations of the net produce.[6] The amendment in 1939 to the Bombay Land Revenue Code, in fact, definitely recognised rental value as the basis of assessment. It also empowered the Provincial Government to revise assessments in any year in accordance with changes in prices.

Assessment under Mahalwari

The assessment under the Mahalwari system aimed at fixing a moderate revenue to be paid by each village as a whole.[7] The basis of assessment was, what are called, "net assets." The maximum revenue demand which was originally fixed at one-half of the net assets was reduced to one-fourth in 1928 and net assets were clearly defined for the first time to mean the estimated average annual surplus produce of an estate or group of estates after deduction of the ordinary expenses of cultivation. An elaborate procedure had to be adopted for determining in terms of money the value of the net assets. The practice was to calculate net assets on the basis of rents paid by tenant-cultivators who usually paid a fixed share of the produce. These estimates were then checked up with reference to the cash rents prevailing in the assessment circle. The produce estimate was based on several factors, such as the average acreage of all crops sown and matured, the average yield per acre of each of these crops, the average obtainable in the village and the actual share of the gross produce received by landowners.[8] The net assets were thus calculated "upon landlords' rentals and not upon owner-cultivators' profits." The assessment for the circle having thus been determined, it was thereafter distributed village by village and for all the holdings in due consultation with the landowners.

6 Report of the Indian Taxation Enquiry Committee 1924-25. *op. cit.*, p. 60.

7 For a fuller report of the system, see the Report of the Punjab Land Revenue Committee (1938).

8 *ibid.*, p. 7.

Though the general pattern of land revenue settlement and assessment in India broadly follows the above classification, the development of the different systems has not been on the same lines in all the States. This disparity has been further widened with the integration of the former Princely States where except in a few States administered by retired or deputed officers from British India, there were no regular settlements or systems of land revenue. The result is that, at one end, there are States like the Punjab, Bombay (before the merger of certain Princely States), Madras, Assam and Mysore in which practically all the land has been surveyed, measured and settled on some definite principles. At the other end, there are States like Rajasthan and Saurashtra and Madhya Bharat regions where there are still large portions of unsurveyed and unsettled lands and settlements made in the past followed no scientific principles and have been more or less the result of political conditions prevailing in the States at that time. In between these two extremes, there are States like Uttar Pradesh and Madhya Pradesh where there have been regular settlements on lands, but owing to the prevalence of the Zamindari system, several intermediaries had crept in.

Basis of Land Revenue Assessment

It seems hardly necessary to describe in great detail the methods of assessment in all the States.[9] The existing methods in different States may be summed up, following the Taxation Enquiry Commission's Report, as follows:

Though the States follow different methods in calculating the land revenue payable to Government, certain common principles are discernible. Under these principles, the methods can be classified as follows: (i) net assets or economic rents; (ii) net produce or annual value; (iii) empirical; (iv) rental value; (v) capital value and (vi) gross produce.

Net Assets or Economic Rents: The net assets are defined as "the estimated average annual surplus of an estate or groups of estates remaining after deduction of the ordinary expenses of cultivation as ascertained or estimated." In other words, it is rent less all costs incurred in earning the rent. The cost incurred

9 For details, see the Report of the Taxation Enquiry Commission 1953-54, Vol. III (1955), pp. 263-284.

by the landlord is deducted from the gross produce which is valued in terms of money at the commutation rate, usually the average price of a particular crop for the preceding 20 years or more. This method is prevalent in the Punjab, Uttar Pradesh, Madhya Pradesh, Himachal Pradesh, Ajmer and Delhi. In the temporarily settled areas of Bihar, Orissa and West Bengal, the principle is adapted to local conditions.

Net Produce or Annual Value: The average outturn per acre of the staple crops for different kinds of soil is at first determined on the basis of crop-cutting experiments and enquiries in the field. The gross value is then estimated on the basis of commutation price, that is, the average price of the preceding 20 non-famine years. The net produce or annual value is then derived by deducting from the gross value, the cultivation expenses and also by making certain allowances for bad seasons. Cultivation expenses included expenses on ploughing cattle, agricultural implements, seed, manure, wages of labour required for sowing, transplanting, reaping, threshing, etc. Madras is the only State which has accepted this principle as the basis of land revenue assessment.

Empirical: The method is called empirical because at the time of the settlement several factors are taken into consideration, such as the economic background of the tract, the area under cultivation, the trends in the cultivated area and agricultural occupations, the trends in material condition of the people, the proximity of markets, the facilities of communications, the fluctuations in prices of main staples, land values of the tract, etc. The aggregate amount of assessment is first fixed for the whole of a tract and then distributed over the villages and individual survey numbers by means of maximum rates for the various classes of land. Bombay, Hyderabad, Mysore and certain areas in Rajasthan, Manipur and Tripura followed the empirical basis.

Rental Value: The main emphasis in all the above States except Madras is on rental value. Though the basis of assessment is net assets or empirical, the general procedure is to determine the actual rents received by the land holders and then to fix the assessment after allowing for certain deductions. In recent tenancy legislation, the trend is to fix the maximum rents

payable by the tenants. In future, therefore, the rental value cannot provide a reliable basis for determining the land revenue.

Capital Value: Capital value has not been adopted as the main principle in any State though at the time of the settlement, the sale and mortgage value of the land forms one of the factors determining land revenue.

Gross Produce: Gross produce was the basis of assessment before the adoption of scientific method. In Assam, this basis still continues and the limit of assessment for any tract has been fixed at 10 per cent of the value of the gross produce of that tract.

Abolition of Intermediaries: The developments which have taken place after Independence have set new and important tasks to the revenue administration of the States involving significant changes in the agrarian pattern of the country, and, therefore, in the land revenue systems as well. The integration of the former Princely States with India and the reorganisation of States posed problems of great magnitude. Several measures of tenure and tenancy reforms have been undertaken by State Governments. These, obviously, have indicated the need for a vital change in the old revenue policy. The system of permanent revenue settlement, it was realised, had become outmoded because of the evils of absentee ownership and rack renting. The abolition of intermediary tenures, imposition of ceilings on ownership of land and many connected reforms[10] are designed to make the tiller of the soil the proprietor and to bring him into direct relationship with the State.

After the abolition of intermediaries, one of the reform measures which has been taken up for consideration is to bring about some equity in land revenue settlement. This involves attempts to reduce disparities in assessment caused by settlement of lands in different time periods. The Taxation Enquiry Commission studied this problem in great detail and made some recommendations which are analysed in the following paragraphs.

10 Discussed in Chapter VIII—Land Tenure and Land Reforms.

The Taxation Enquiry Commission's Recommendations

"The States realise about Rs. 70 crores from this source (land revenue), and no alternative method which has so far been suggested is likely to yield a revenue which even approximates to that figure," wrote the Commission.[11] The alternatives suggested to land revenue are agricultural income-tax in combination with low flat rates of land tax, sales tax at the first point of sale by producer and lastly, sliding scales of revenue correlated to prices—directly or through surcharges on sliding scale on land revenue. The first two are independent of land revenue. The other two are related to land revenue with a view to securing for the State a portion of benefit accruing to the agriculturist with as little disturbance as possible to the existing system. Before considering these suggestions, the Taxation Enquiry Commission's recommendation regarding 'standard assessment' may be studied.

Standardisation of Assessment

The most important part of the scheme has to do with what is called the 'basic pattern.' Taking a hypothetical State where settlements were due for revision in the 'thirties, the Commission laid down proposals for standardisation of assessment and revision and for apportionment of land revenue to local bodies. The Commission recommended that the basic pattern of settlement and revision, while largely similar to the existing ryotwari pattern, should make a departure from it in significant respects. The revision of settlement should be divorced from small units and local prices and be based instead on the State or, within the State, on homogeneous regions. For this purpose, existing disparities of assessment should first be corrected with reference to a criterion that can be applied on a State-wide basis. Thereafter, at the "standardised" level which the assessments then assume, they should be revised for the State as a whole or for the regions, at intervals which are neither unduly short nor unduly long. Each such revision, whether upward or downward, should again be within strictly defined limits and should be effected with reference to an adjusted price factor worked out

11 *cf.* Report of the Taxation Enquiry Commission 1953-54, Vol. III, *op. cit.*, p. 209.

for the whole State or for each of the regions. Standardisation is necessitated by the disparities in original assessment due to differences in resettlement rates of different regions at different times. The existing disparities are further accentuated by the surcharges superimposed on the present assessment pattern. Further, resettlement costs will be too heavy to undertake wholesale revision.

In standardisation of assessment, disparities in assessment cannot be entirely removed. Further, some rules regarding changes in assessment in direct relation to changes in prices have to be framed. For ready application, a simple, standardising measure has been suggested. If all resettlements were due at the same time, the same increase in assessment would be called for in the case of all lands. Settlement or resettlement, with reference to commutation prices of previous 20 years, has been the usual procedure for fixing assessment in any year. This period may be called "the relevant price-period." As prices have been rising over the past 100 years, the earlier the relevant price period, the lower the level of assessment. An *ad hoc* method of ready applicability consists in grading increases in relation to price period relevant to settlement or resettlement at which the existing assessment was fixed. The maximum increase has been fixed at 25 per cent and all settlements have been reduced to four categories with reference to relevant price period as follows:

Relevant price period	Average price level (1873=100)	Increase in assessment (per cent)
1880-99	124	25
1900-19	195	12½
1920-39	242	6¼
1940 onwards	697	nil

Source: Report of the Taxation Enquiry Commission 1953-54, Vol. III, *op. cit.*, p. 227.

Each State will have to work out details of standardisation according to local conditions. If relevant price period falls in

more than one of the groups in the above table, that in which majority of relevant years fall should be taken for standardisation.

Revision in Settlement

As for revision of settlement, the time taken now is too long. Decennial changes in assessment, which permit of more or less automatic revision with reference to price levels, may help to save cost. In making changes in assessment, changes in price cannot be taken at full face value. Moreover, costs of production change. A practicable method of allowing for changes in costs of production, which would normally occur in the same direction as changes in prices, would be to base the adjustment on a fraction of the price change. This would be particularly suitable during a phase of rising prices. Enough safeguard in case of price fall should be provided to the cultivator.

In computing the price index and price change, the major crop of an area has to be considered. If the crop is a food crop, it should be the price of that crop. Where a commercial crop predominates greatly, the price of that crop should be taken as the base. If both food and commercial crops are grown, a composite index may have to be constructed. In fixing the 'base' and 'current' periods for reassessment, the base should be regarded as a period of not less than ten and not more than twenty years preceding the standardisation and for first revision the current period would be the ten years intervening standardisation and its revision. Revision should be with reference to the relevant price period, where price change has been more than 25 per cent in either direction. This does not apply to revision of settlement that has to do with change of land from dry to wet category or the opposite. This is explained in the following table.

Price change (per cent)		Land revenue (per cent)	
Rise	Fall	Rise	Fall
25	25	nil	nil
25	31¼	3⅛	6¼
31¼	37½	6¼	12½
37½	43¾	9⅜	18¾
More than 43¾ on either side		12½	25

In other words, when price falls, the cultivator is compensated by relatively steeper reduction in revenue rates. But the cultivator benefits if prices rise and the tendency is often for prices to rise, of late, especially if slight inflation is accepted as an accompaniment of development, even if prices are relatively stabilised. In that case, it is justifiable to claim a larger portion than that stated in the above table. Further, if (say) prices fall in current period and rise later (on the average), then using a formula as above would in no way benefit the Treasury. Moreover, as the Commission itself pointed out, the standardised assessment can be used only in a few States completely. In fact, it is suggested that "every State which has to undertake the initial settlement, should, unless there are good reasons to the contrary, adopt the basis that is in operation in the adjoining States or area."[12] In the former zamindari tracts, it will have no more than a "notional" value. Because of limited applicability, the Commission's suggestions may not be of much value, if prices are still to rise after an initial fall.

Among the alternatives suggested, the combination of agricultural income-tax with a flat land tax as in Travancore-Cochin was rejected by the Madras Land Revenue Reforms Committee (1951) on grounds of inequity as well as loss from wet lands due to low level of taxation.[13] This argument holds true for most of the States.

The suggestion of the sales tax on producer at the first stage of sale has been rejected as financially and administratively not feasible. The scope for evasion is very great in the case of such a tax. The alternatives left are a sliding scale assessment and surcharge on land revenue.

Sliding Scales and Surcharges

The essential purpose of sliding scale assessments and surcharges is to introduce in the land revenue systems an element of responsiveness to changes in prices and incomes, over short periods, without disturbing the basic character of land revenue

12 *op. cit.*, p. 233.

13 For a discussion, see the Land Revenue Reforms Committee, Madras, Second Report (1951), pp. 18-20.

system. They are based on the perfectly valid idea, as the Commission calls it, that when prices go up or down as much as they have in the last two decades, changes in the burden of land revenue are justified from the point of view of both the Government and the land holder. The changes that may be brought about through a surcharge at State level or sliding scale assessments at the local level to fit in the local variations in prices are not related to flat local surcharges to reduce disparities in settlements due to temporal causes. They are purely of short period nature, but take into account the change in local prices in the case of localised crops and changes in Statewise prices in the case of staple crops to determine the level of levy. But the Commission admitted that "the difficulty is that of fitting the idea into the sysem."

Sliding scale assessment was attempted in pre-Partition Punjab. Maximum assessment was fixed for each circle on the basis of commutation prices, *i.e.*, average of prices during the twenty years preceding the year of settlement. Thereafter, annual changes in prices based on market reports were taken into account to determine the percentage mark-up or mark-down that should be made in assessment in relation to the changes in prices. But the most important obstacle was that of constructing an index number for prices in the 1930's. At present, with the changing nature of the economy through improvements in irrigation and agricultural extension, the crop pattern is changing and will change further. The price changes have been favourable to the landowner. With the increasing monetization of the economy and regulation of markets, State-wide price changes have more significance and local variations get ironed out quickly. In such a context, progressive surcharges on land revenue will have more validity than sliding scale adjustment. Further, on commercial crops, special cesses are levied which are *ad hoc* in nature. It is preferable to levy such *ad hoc* cesses because it is difficult to forecast the price changes. The cesses may be retained, changed, or abolished depending on the changes in price levels. They need not be fitted into a system. These cesses combined with sliding scale surcharges on land revenue can bring revenue to the Government as well as introduce an element

of equity in land taxation. The elaborate procedure involved in standardised assessment can very well be avoided.

Recent Developments

At present, surcharges are being levied in Andhra Pradesh, Punjab, Haryana, Rajasthan and Madhya Pradesh, to fit the above elements in their land revenue pattern. For example, in Andhra State, a graded surcharge on land revenue was levied up to February, 1957. After the reorganisation of States, it was decided to abolish the Hyderabad Agricultural Income Tax Act, 1950 that was in existence in the Telangana district of Andhra Pradesh, and also the surcharge on land revenue in the rest of the State. Instead, a fresh surcharge was levied with effect from 1st July, 1957 on dry and wet lands in the Andhra area and dry lands in Telangana area on persons paying more than Rs. 10 as land revenue. The surcharge varies from 13 to 50 per cent for land revenue above Rs. 500. In the case of wet lands in Andhra area, the levy applies to the land revenue element only which is calculated at 25 per cent of the consolidated assessment. The wet lands of Telangana region are exempt from the surcharge, because it is felt that assessment rates prevailing there are already high. The exemption level for the surcharges is very low and gradations are only three in number. This makes the surcharge more burdensome on the small farmer.

Under the Punjab Land Revenue (Special Charges) Act, 1958, a special charge on land revenue is levied on landowners on a graded basis. The charge is recoverable as land revenue. The rate is 50 per cent where land revenue exceeds Rs. 50 but not Rs. 100 annually. It increases progressively up to 300 per cent for land revenue exceeding Rs. 1,000 per annum. It has also been proposed to levy an additional surcharge at the rate of 50 per cent on land revenue on holdings of more than 5 standard acres from April, 1968. Haryana also has adopted the same basic pattern as in the Punjab. This State proposed a levy of surcharge of 50 per cent on land revenue from 1967-68. The Rajasthan Land Revenue (Surcharge) Act of 1960 follows the same basic pattern. The surcharge varies from 6¼ per cent to 12½ per cent for land revenue above Rs. 250 per annum. Holdings paying less than Rs. 50 per annum as land revenue, are not liable to the

surcharge. It is proposed to enhance the rates of surcharge in the case of land holdings of 30 standard acres or more from 1967-68. The rates of levy in Rajasthan and the Punjab are however much lower than the compounded rates of agricultural income-tax in Madras and Mysore. But the exemption levels in the northern States are much higher. Moreover, there is no adjustment for the crop grown as is the case with Madras and Mysore. In Uttar Pradesh, Madras and Mysore, the surcharge on land revenue was withdrawn from 1967-68.

Some States have imposed special surcharges on the cultivation of commercial crops. For example, the Andhra Pradesh Commercial Crops (Assessment) Act of 1957 provides for the levy of special assessment of Re. 1 to Rs. 5 per acre on land holdings above 10 cents in size growing commercial crops. The assessment rates are Rs. 5 per acre for turmeric, sugarcane and plantains; Rs. 3 per acre for coconut, chillies and tobacco (Virginia); Rs. 2 per acre for citrus crop; and Re. 1 per acre for cotton, groundnut, tobacco and casuarina. Though commercial crop cesses are levied either on *ad valorem* basis, as for example, in the case of groundnuts in Punjab or on the basis of acreage or even on the basis of weight as in the case of sugarcane, the rates are flat rates and are proportional in character. Apart from these changes, in Orissa and Assam, legislation has been passed to reduce the inequalities in land revenue due to differences in time periods in which the settlements were made. In Bihar, a cess of one anna in a rupee of rent is levied to finance primary education. Similarly, a flat surcharge on land revenue at the rate of 2 annas per rupee has been levied in Madras since 1955 to assist local bodies in maintaining and improving rural communications. The flat surcharges add to the increase of land revenue at the lowest levels by a small percentage unlike the progressive surcharge. Thus, in several States where the agricultural income-tax is not levied, adjustments to bring about an element of equity in taxation of land owning classes are sought to be achieved by progressive surcharges.

PROGRESS IN LAND REVENUE COLLECTION

The significance of land revenue has considerably changed over the long period of its history. The change is noticed in

(i) the burden on the person who pays it, (ii) the place which land revenue occupies in the composite fiscal pattern of the country, and (iii) the general level of land revenue in relation to the levels of agricultural prices. It is claimed that progressive monetization, the development of internal transport, the growing commercialisation of agriculture and the general evolution of an all-India market with the steady support thus provided to local prices have served to lighten the burden of land revenue in the decades that have passed.

From 1890 up to the period of World War I, the level of land revenue would appear to have been fairly steady in spite of the price being 5 to 6 times higher. Expressed in terms of the price of foodgrains, the land revenue receipts declined from 1873 to 1912.[14] Thereafter, there was a sharp rise in agricultural prices; foodgrains prices almost doubled. This led to a substantial reduction in the burden of land revenue collected even after adjustment for the rise in foodgrains prices. After 1929, however, there was a trend of decline in prices as a result of the depression. Expressed in terms of constant prices, the burden of land revenue was perhaps two-thirds higher during the period 1930-37. The World War II, by causing an increase in the price of foodgrains to more than four times the pre-war level, once more drastically reduced the burden of land revenue. Since 1948, the receipts from land revenue, however, have shown an increase.[15]

Apart from the changes in the burden in the different periods, the general inference is that the long-term trend has been in the direction of a steady and latterly, drastic reduction in the burden. This is also confirmed by the steady decline, since the middle of the last century, in the proportion which the land revenue collections bear to the total revenue receipts of the Centre and the States. Table I gives the receipts from land revenue as a proportion of total revenue prior to World War II.

14 Taking the base year as 1873=100, the index was 89 during 1873-82; 94 for 1883-92; 92 for 1893-1902 and 84 for 1903-12.

15 Most of this is reported to be statistical, being the result of the merger of parts of certain former Princely States with Part A States and the conversion of rent into land revenue in consequence of the abolition of Zamindari.

TABLE I

RECEIPTS FROM LAND REVENUE AS A PROPORTION OF TOTAL REVENUE (CENTRE AND STATES)

(*in per cent*)

1793-94	69.0
1808-09	61.1
1818-19	73.1
1839-40	70.6
1850-51	66.5
1871-72	42.8
1881-82	35.5
1891-92	36.5
1901-02	33.9
1911-12	31.3
1938-39	16.1

Source: Report of the Taxation Enquiry Commission 1953-54, Vol. III, *op. cit.*, p. 216.

Table II gives the annual receipts of land revenue as a proportion of the total tax revenue of all States since 1950.

TABLE II

LAND REVENUE RECEIPTS FOR ALL STATES: 1950-51 TO 1967-68

(*Rs. in crores*)

Year	Land revenue	Total tax revenue	Land revenue as proportion of total tax revenue
1950-51	49.6	—	—
1951-52	48.0	281.1	17.0
1955-56	78.0	356.1	21.9
1956-57	83.2	395.7	21.0
1960-61	97.2	624.8	15.5
1961-62	95.2	662.6	14.3
1965-66	111.9	1,117.8	10.0
1966-67	89.6	1,305.7	6.9
1967-68*	99.2	1,459.4	6.8

* Revised estimate.

Source: "Finances of State Governments," *Reserve Bank of India Bulletin*, Vol. XIII, No. 6, June, 1959 and Vol. XXII, No. 5, May, 1968, p. 582.

It may be noted that between 1951-52 and 1965-66, the relative share of land revenue in the total tax revenue has declined from 17 to 10 per cent and further declined to 6.9 per cent in 1966-67. During 1967-68, the relative share of land revenue in the total tax revenue in each State showed a further decline and was above 10 per cent only in three States, namely, Assam (16.1 per cent) Rajasthan (15.7 per cent) and Uttar Pradesh (13.1 per cent). The percentage share of land revenue was less than 10 in the remaining States—Madhya Pradesh (8.9), Mysore (7.7), Gujarat (7.3), Jammu & Kashmir (7.0), Andhra Pradesh (6.5), Orissa (5.1), Bihar and Maharashtra (4.2), Haryana and West Bengal (4.1), Punjab (3.6), Madras (3.5) and Kerala (3.0). Receipts from land revenue sharply declined during 1966-67 due to remissions in land revenue and abatement of land rent granted following drought conditions in many States. The decline in the importance of land revenue was due to the growth and increased importance of new forms of taxation, such as income-tax, customs and excise at the Centre and sales tax and other taxes in the States.

Since 1966-67, a few States have proposed to abolish land revenue because it is felt to be inequitable and harsh on small farmers and also because the yield from it is low or insignificant. In West Bengal, the State Government has not considered the abolition of land revenue wholly, although the question of exempting owners of small holdings from land revenue is under consideration. In Bihar, the State Government abolished land revenue with retrospective effect from April, 1967 and decided to substitute it by a progressive land tax. The State Government has, however, decided to reimpose land revenue during 1968-69.

The Governments of Madhya Pradesh, Madras, Mysore, Orissa, Punjab, Haryana, Rajasthan and Uttar Pradesh have either decided to abolish land revenue or agreed in principle to do it. In Madhya Pradesh land revenue was abolished on holdings of 7.5 acres or less and those in respect of which the assessment did not exceed Rs. 5 per annum in 1966-67 and wholly from July, 1968. In its place, it has been proposed to impose a land development tax on holdings of 20 acres and above. In Madras, the report submitted by a special officer appointed to study the problem in all its aspects, is under consideration of the State Government. The Mysore Government has taken a decision

to abolish land revenue in its present form. In Orissa, the State Government decided to abolish land revenue in full from the agricultural year 1967-68 and the decision has been implemented. In Punjab and Haryana, a decision has been taken to abolish land revenue on holdings up to 5 acres. The Punjab Government has also proposed revision of rates of land revenue on holdings of 5 standard acres and above. In Rajasthan, small, uneconomic holdings have been exempted from land revenue. In Uttar Pradesh, the State Government has abolished 50 per cent of land revenue on holdings up to 6.25 acres from April, 1967 and has further decided to abolish land revenue completely in five years.

In Kerala, it has been decided to exempt holdings below 2 acres from land tax. In Jammu & Kashmir, it has been proposed to replace the existing system of land revenue by a more scientific system of taxation based on actual earnings of cultivators with complete exemption for small holdings.

The incidence of land revenue for different income groups in the rural sector could only be estimated if a classification of rural incomes in different groups was available, together with the land revenue payable by these different classes. As these data are not available, it is not possible to indicate the relative incidence of land revenue in these terms. There are considerable variations in land revenue assessment between different types of agricultural land in a State, and, even more, from State to State. There is, however, a certain average burden of land revenue on agriculture in the country which is indicated by the ratio of the total land revenue collected to the total (gross or net) value of agricultural output. The value of net product in agriculture (at current prices) in India for 1950-51 was estimated at Rs. 4,780 crores, whereas land revenue collection amounted to Rs. 49.6 crores, which is 1.03 per cent of the net value.[16] In 1966-67, the net value of total agricultural output (at current prices) increased

16 Data relating to the value of agricultural output are not available on a comparable basis for earlier years; even land revenue collection figures for the earlier years would be imprecise because land revenue collections of the former Part B States are not available. It is estimated, however, that land revenue formed less than 4 per cent of the gross value of agricultural output and about 4.5 per cent of net value in 1938-39. Report of the Taxation Enquiry Commission 1953-54, Vol. I (1955), p. 73.

to Rs. 11,595 crores[17] and land revenue amounted to Rs. 89.6 crores, constituting 0.77 per cent of the net value added in agriculture. By any token, this must be considered as very low. There is therefore considerable scope for increased taxation of higher agricultural incomes.

Since 1950-51, substantial increase in land revenue collections has taken place mainly owing to abolition of zamindari and other land reforms. The receipts of land revenue show an increase of Rs. 62.3 crores between 1950-51 and 1965-66. But this entire increase cannot be attributed to land reforms. It reflects the combined effect of (i) abolition of intermediaries; (ii) imposition of land revenue on land previously held assessment free; (iii) imposition of land revenue on Ryotwari basis on hitherto *inam* lands; (iv) imposition of surcharge on land revenue; and (v) step-up in land revenue assessment in some of the States. Of these, the last four measures are a part of the effort of the State Governments to raise additional revenues. The yield from these measures is estimated at Rs. 17.9 crores during the First and Second Five-Year Plans.[18] Since the annual revenue from these measures has been quite small, a major portion of the increase in land revenue receipts over the last decade must be attributed to the abolition of intermediaries. The increase in land revenue shown in Table II is, however, not the net increase in the revenues, inasmuch as the State Governments, especially Bihar, Orissa and West Bengal in which assessment was permanently settled, have to incur considerable expenditure on building up adequate machinery for land revenue administration for the purpose of maintaining record of rights, registration of transfers, partitions, sales, etc., and collection of land revenue, all of which was hitherto the responsibility of the zamindar. It may be noted that the current expenditure on land revenue administration in the States has increased from Rs. 7.37 crores in 1950-51 to Rs. 37.24 crores in 1960-61.[19] Some of this expenditure, however, will not be of a

17 Estimates of National Product (Revised Series): 1960-61 to 1966-67, Central Statistical Organisation, Government of India (1967), p. 4.

18 *Vide* M. L. Dantwala, "Financial Implications of Land Reforms," *Indian Journal of Agricultural Economics*, Vol. XVII, No. 4, October-December, 1962, p. 7.

19 *ibid*, p. 8.

recurring character (like that on cadastral survey and record of rights) and as such, with the efflux of time, the expenditure on revenue administration may decline. As a consequence of the zamindari abolition legislation, the State Governments concerned are now receiving as revenue from the new occupants what the erstwhile zamindars were receiving as rents from them. This amount is evidently much larger than what the State Governments were receiving as land revenue from the zamindars, the additional amount being the difference between the total quantum of rent paid by the ex-tenants to the zamindars and the land revenue paid by the latter to the State Governments. Against the additional income, the State Governments have assumed the responsibility to pay compensation to the zamindars. During the last decade (1951-61), the net addition to land revenue receipts (deducting the increase in expenditure on land revenue administration) amounted to Rs. 74.34 crores; as against this the compensation paid during this period amounted to Rs. 86.71 crores. This left the States aggregatively with a net deficit of Rs. 12 crores. Only the States of Uttar Pradesh, Bombay, and Mysore had a positive balance at the end of the Second Five-Year Plan. The amounts payable as compensation will be considerably larger during the Third and Fourth Five-Year Plans. Since acquisition of almost all the zamindaris is over, further additions from this source are not likely to go up in the future.

By and large, land reforms have not affected the pattern of land taxation in India. Even the recommendations of the Taxation Enquiry Commission for rationalisation of land revenue taxation have not been implemented. We may now deal with the other forms of agricultural taxation, particularly agricultural income-tax.

AGRICULTURAL INCOME-TAX

The Taxation Enquiry Commission (1953-54) recognised that none of the alternative measures of taxation could be an effective substitute for land revenue from the point of view of the finances of State Governments, though some of the measures such as agricultural income-tax may indeed be extremely appropriate as features supplementary to land revenue itself. Examining the significance of agricultural income-tax in the tax structure of the

States, the Taxation Enquiry Commission observed that "an agricultural income-tax on the higher agricultural incomes should be adopted by all the States which have not yet done so because of the greater equity it brings into the system, if not of the revenue it brings to the exchequer." While it would not be practicable to aim at achieving uniformity in rates, it should be possible to have uniform limits of exemption. The Commission suggested Rs. 3,000 as the reasonably adequate limit of exemption. The fact that agricultural and non-agricultural incomes are treated as two distinct compartments, State and Union, for purpose of taxation, has given rise to many anomalies. Therefore, it has been suggested that from the point of tax equity, the eventual policy should be to merge agricultural income with non-agricultural income and levy one income-tax, the proceeds being made divisible between the Union and each State in the proportion of the two categories of income. As a first step in this direction, it was recommended that the States should adopt a system of surcharges on agricultural income-tax, the rates of surcharges being fixed so as to vary with the assessee's non-agricultural income. The surcharge should be on the agricultural income-tax, expressed as a fraction of it.[20]

Agricultural incomes in India have been exempted from the general income-tax except for two short periods of nine years in all between 1860 and 1865 and 1869 to 1873. The position remained unchanged until the passing of the Government of India Act in 1935, though the Indian Taxation Enquiry Committee (1924-25) had favoured in principle the imposition of an agricultural income-tax.[21] A separate provincial levy on agricultural incomes became possible only after this Act. Even under the present Constitution the two types of income are separated and agricultural income taxation is assigned to the States. Bihar

20 Report of the Taxation Enquiry Commission 1953-54, Vol. III, *op. cit.*, pp. 221-223.

21 The Indian Taxation Enquiry Committee observed in 1925: "There is no historical or theoretical justification for the continued exemption from the income-tax of incomes derived from agriculture. There are, however, administrative and political objections to the removal of exemption at the present time. There is ample justification for the proposal that incomes from agriculture should be taken into account for the purpose of determining the rate at which the tax on the other incomes of the same person should be assessed, if it should be administratively feasible and practically worthwhile." Quoted in the Report of the Taxation Enquiry Commission 1953-54, Vol. III, *op. cit.*, p. 198.

was the first State in India to levy a tax on agricultural incomes in 1938, after a lapse of nearly 60 years. The other States which now levy the tax are: Assam, West Bengal, Orissa, Uttar Pradesh, Kerala, Madras, Mysore, Madhya Pradesh (Bhopal and Vindhya Pradesh areas only) and Jammu & Kashmir.[22] The existence of large plantations of a commercial character and big land holders in the permanently settled areas of some of the States provided the basis for the levy of an agricultural income-tax. Madras has restricted the tax to income from plantations. Although Maharashtra has also introduced this tax since 1962, the tax has been specifically designed to affect mainly the large sugarcane farms. In the former Princely States of Hyderabad and Travancore-Cochin (Kerala), agricultural incomes along with non-agricultural incomes were taxable even before the integration of those areas with the rest of India. After integration only agricultural income-tax is levied by the State Governments. In the case of Uttar Pradesh, this tax was replaced by a Large Land Holdings Tax from the financial year 1957-58. A holding tax is levied on all land holdings the annual value of which exceeds Rs. 3,600. No tax is levied on holdings of less than 30 acres in size. For the purposes of assessment, the annual value of the holding is fixed on the basis of a certain multiple not exceeding 12½ per cent of the rent payable for such land. The rates of the holding tax follow a graduated scale so that the larger the annual value of the holding, the greater the rate of the tax.

The agricultural income-tax is charged on the total agricultural income of the previous year of every person, including an association of individuals, undivided Hindu family, a firm or a company. The rates of levy have been laid down in the enactment itself in some of the States, while in others the rates are fixed annually under the Finance Acts. Apart from the exemption granted to lower levels of income, certain types of agricultural incomes are also exempted, such as incomes derived from property held under trust or other legal obligation wholly for religious or charitable purposes, sums received by individual assessees out of agricultural incomes of undivided Hindu families, association of persons, firms or companies, which are

22 Rajasthan also levied agricultural income-tax from 1953 to March, 1960, when it was abolished.

already taxed, etc. The exemption limit is Rs. 3,000 in the States of Bihar, Assam, West Bengal, Madhya Pradesh and Jammu & Kashmir. The exemption limits are higher at Rs. 5,000 in Orissa, Rs. 3,600 in Uttar Pradesh, Madras and Kerala and Rs. 3,500 in Mysore. In Maharashtra, the exemption limit is Rs. 36,000 which is rather an exception. The exemption limit prescribed for undivided Hindu families is Rs. 6,000 in Kerala and Rs. 7,000 in Mysore.

The rates of agricultural income-tax in all the States are based on the slab system thereby introducing an element of progressiveness in the tax. The tax free slab is Rs. 1,800 in Uttar Pradesh, Rs. 3,000 in Orissa and Jammu & Kashmir and Rs. 3,600 in Madras. For other States, the tax free slab is Rs. 1,500. The minimum and maximum rates are 3 nP and 78 nP in the rupee in Orissa. In Uttar Pradesh, the maximum rate is 60 nP in a rupee for the slab exceeding Rs. 35,000. In other States, the maximum rate varies from 25 nP to 45 nP in the rupee. In Maharashtra, a flat rate of 50 nP in the rupee is levied. It may be noted that in Madras, Mysore and Kerala, a compounded tax is levied with a view to relieving the smaller assessees of the burden of keeping detailed accounts. In Madras, any person holding land not exceeding four times the exempted limit of 12½ standard acres could apply for permission to compound the tax payable by him and to pay instead a lump sum in a prescribed manner. The rates of tax followed a graduated scale. No tax was levied on the exempted limit. The rate of tax varied from Rs. 4.50 to Rs. 15 per standard acre on holdings between 20 and 50 standard acres. An amendment to the Madras Agricultural Income-Tax Act has sought to remove the existing provisions relating to compounding of tax on agricultural incomes accruing in 1967-68 and assessable in 1968-69. In Mysore, any person deriving agricultural income from land not exceeding 150 acres in extent of the eighth class of land is permitted to compound the agricultural income-tax payable by him and to pay instead a lump sum at the rate of Rs. 2 per acre. In Kerala also, any assessee other than a company is allowed to compound the tax payable by him for a consolidated payment of Rs. 75 from April, 1960 or any subsequent year if his total agricultural income for the previous year does not exceed Rs. 5,000. Agricultural

incomes have also been subjected to super-tax in Bihar, Kerala, Madhya Pradesh (Bhopal) and Mysore when income exceeds Rs. 25,000. In Bihar and Madhya Pradesh (Bhopal), the structure of rates is more or less similar; the rate varies from a minimum of 6 nP in the rupee on the first income slab of Rs. 10,000 after the exempted limit to a maximum of 33 nP in the rupee. In Kerala, the minimum rate is 12 nP in the rupee on the first Rs. 15,000 after the exempted limit, rising to a maximum of 34 nP in the rupee. The rate of super-tax on the higher slabs of agricultural income-tax has been proposed to be raised from 1967-68. Besides, in this State super-tax is levied on the agricultural incomes of companies on a slab basis, the rate varying from 12 nP in the rupee on the first slab of Rs. 1 lakh to 31 nP in the rupee on amounts exceeding Rs. 10 lakhs. In Mysore, it varies from a minimum of 9 nP on the first Rs. 25,000, after the exempted limit to a maximum of 25 nP in the rupee. It may be mentioned that no State seems to have levied a surcharge on agricultural income-tax on the basis of assessees' non-agricultural income.[23]

Receipts from the Agricultural Income-Tax

The receipts from the agricultural income-tax in different States during 1950-68 are given in Table III. The total receipts increased from Rs. 4.1 crores in 1950-51 to about Rs. 9.9 crores in 1965-66 and Rs. 10.6 crores in 1967-68. While the average annual receipts are estimated at about Rs. 4.9 crores for the First Plan period, the corresponding average for the Second and the Third Plan period amounted to Rs. 8.5 crores and Rs. 9.8 crores. The main reason for the rather impressive increase of Rs. 3.6 crores in the receipts is the introduction in 1955-56 of the tax in Madras, the annual average receipts of which alone accounted for Rs. 1.25 crores during the Second Plan period. Another distinguishing feature of this tax is the concentration of receipts in a few States; the three States of Assam, Kerala and Madras accounted for two-thirds of the tax collections during the three years ending 1967-68. This can be attributed to the fact that plantations, mainly tea, are predominant here; these three States

23 *Reserve Bank of India Bulletin*, Vol. XVII, No. 8, August, 1963, pp. 1022-1033.

TABLE III

RECEIPTS FROM AGRICULTURAL INCOME-TAX: 1950-68

(*Rs. in lakhs*)

State	1950-51	1951-52	1957-58	1960-61	1961-62	1965-66	1966-67	1967-68*
Assam	79	91	224	275	288	284	274	309
Kerala	—	—	183	235	246	227	281	280
Travancore-Cochin	50	99	—	—	—	—	—	—
Madras	—	—	130	135	142	123	146	127
West Bengal	63	64	117	85	89	108	122	77
Uttar Pradesh	138	100	53	83	61	32	28	27
Mysore	—	—	54	74	59	158	151	169
Coorg	—	3	—	—	—	—	—	—
Bihar	69	57	14	51	47	22	13	38
Orissa	10	13	3	4	5	7	7	6
Rajasthan	—	—	2	3	6	2	1	2
Andhra Pradesh	—	—	—	3	1	—	—	—
Hyderabad	—	11	—	—	—	—	—	—
Madhya Pradesh	—	—	—	1	—	—	—	—
Bhopal	—	—	—	—	—	—	—	—
Vindhya Pradesh	—	—	—	—	—	—	—	—
Maharashtra	—	—	—	—	—	25	31	20
Jammu & Kashmir	—	—	—	—	—	—	—	1
	409	436	780	949	944	988	1054	1056

* Revised estimate.

Source: *Reserve Bank of India Bulletin*, *Vol*. XVII. No. 8, August, 1963, p. 1028; Vol. XXI, No. 8 August, 1967; and Vol. XXII No. 5, May, 1968.

Note: Statewise figures for 1955-56 and 1956-57 are not available; total receipts in these two years amounted to Rs. 7.7 crores and Rs, 7.9 crores respectively.

together account for about three-fourths of the tea production in the country.

The implementation of land reform measures, in so far as they limit size of holdings has resulted in the reduction of the yield from agricultural income-tax. As a result of the abolition of intermediaries and conferment of occupancy rights on the tenants, the big land holdings are broken up and consequently, the number of persons in the higher income brackets falling within the purview of agricultural income-tax has declined considerably. In Uttar Pradesh, receipts from agricultural income-tax fell from Rs. 138 lakhs in 1950-51 to Rs. 53 lakhs in 1957-58. The Uttar Pradesh Government considered the levy of agricultural income-tax as an outdated measure in the post-zamindari abolition era and it was replaced by the Land Holdings Tax. As a result, the revenue collections rose to Rs. 83 lakhs in 1960-61, but even so the total yield was relatively less than that in 1950-51. Similarly in Bihar, the yield declined from Rs. 69 lakhs in 1950-51 to Rs. 14 lakhs in 1957-58. In the case of West Bengal also, the yield from this source declined from Rs. 168 lakhs in 1956-57 to Rs. 89 lakhs in 1961-62 and Rs. 65 lakhs in 1963-64. It may be noted that the decline in the receipts from agricultural income-tax was accompanied by an increase in the receipts from land revenue.

On the whole, the scope for realising substantial revenues by levying a tax on agricultural income was perhaps greater in those areas where the tenure system was characterised by large holdings. Thus Bihar, Assam, West Bengal and Uttar Pradesh were the first to introduce this tax. In the Ryotwari areas like Maharashtra and Mysore where peasant proprietorship prevailed, the scope was comparatively limited. With the abolition of the intermediary type of tenure and with the imposition of a ceiling on the existing land holdings resulting in the disappearance of big land holders, the scope for this tax has been considerably restricted.

IRRIGATION RATES AND BETTERMENT LEVY

Other forms of taxation on land are the irrigation rates and betterment levy. Irrigation rates are a payment for the use of water and are thus a component of the cost of production. Better-

ment levy is a payment for the increase in the capital value of land on the introduction of irrigation, resulting from the benefit derived by the permanent improvement in the form of an assured supply of water to the land or protection against floods.

Rationale of Irrigation Rates

The general principle underlying the 'charges for water' is the fact that investment in irrigation is not one of those public investments whose benefits are more or less evenly diffused among the entire community and the cost of which may be met through the general revenues. There exists a group of immediate and principal beneficiaries, that is, the cultivators receiving irrigation. Irrigation leads to an increase in farm output brought about through a more intensive use of land resulting in increased farm incomes. Irrigation facility is a service and since it involves capital investment, it is but proper that the persons benefiting from it should bear the full cost of water supply so that irrigation works become self-supporting and their burden does not fall on the general community of tax-payers.

In the past, the possibility of recovering the cost of irrigation has been an important consideration in selecting projects as is reflected in the productivity criterion that was adopted in the choice of investment in an irrigation project. Apart from what were known as the protective works, which were constructed with the full knowledge that they were not likely to bring in full return on the capital invested but were undertaken as a measure of famine prevention, an irrigation project had to be productive, the test of productivity being that the project should be able to show a certain percentage return on the sum-at-charge in the tenth year after the opening of the canal, the sum-at-charge being the capital cost plus the arrears of interest up to that year. In recent years, while the conventional distinction between productive and protective works has largely disappeared and a capital work is judged from a broad social benefit's point of view, the productivity test is still applied, though not rigidly, in judging the financial soundness of a project. In other words, it is ascertained whether the expected annual income would be sufficient to meet the annual cost[24] of the project.

24 Annual cost refers to the cost of maintenance and operation, depreciation charges and interest on capital invested.

A very important issue in regard to irrigation rates is the method of determining the rates. The Taxation Enquiry Commission discussed the various methods of charging for water, but came to the conclusion that while a particular system may be the theoretically ideal one, its practicability may not be so easy to determine. There are two important factors that have to be borne in mind before any method is adopted. These are: (1) equity for the farmer who pays the water rate and (2) revenue for the Government from this particular source. It is felt that the objectives of a satisfactory structure of water rates should be as follows: (i) the total recoveries on account of water rates should not be less than the annual cost incurred by the State for providing the service; (ii) the water rate for a crop should be equitable, in the sense that it should be related to the ability of the crop to bear it; and (iii) water rates should be so pitched as not to leave any irrigation potential unutilised on account of either the system of charging rates or the level of particular rates.[25]

The two main considerations in fixing water rates are: cost and benefits. On the side of cost, the necessity of recovering total cost, both fixed and variable, or the recovery of variable cost alone, may determine the level of rates. On the side of benefit, the water rates, at the maximum, could take away the entire net benefit available to the irrigator.

The Indian Taxation Enquiry Committee of 1924-25 pointed out that water should not be supplied at a rate which did not cover the interest on the capital cost and cost of maintenance of the work, except in the case of protective works. The other important criteria suggested for determining water rates are quantity of water supplied, value or net profits and prices. The Committee came to the conclusion that a combination of the nature of the area irrigated, crop and prices would be the ideal basis in fixing water rates. The Taxation Enquiry Commission (1953-54) recommended linking the water charges to the maintenance costs. The maintenance costs are of two types: (i) those which have to be incurred to keep the irrigation project in working

25 Report of the Maharashtra State Irrigation Commission, Government of Maharashtra (1962), p. 69.

order, and (ii) those which have to be incurred to supply water to the cultivators. Thus, according to the Commission, the water charges should comprise: (i) a small charge covering the cost of repairs, establishment, etc., to be recovered from every land holder under the command of the irrigation project, irrespective of whether water is taken by them or not, and (ii) an additional charge for the supply of water which will primarily cover the debt charges, overhead expenses, etc., to be levied on those who actually make use of the water from the project. The Commission pointed out that while these aspects should form the basic principle, other considerations while fixing the water rates should be: the quantity of water supplied, value of crop grown, extent of benefit realised by the cultivator and ability of the cultivator to pay.[26] The First Five-Year Plan conceives the water rate as "a charge dependent on the kind and extent of crops grown and is based on the quantity of water required by the crop and the advantage derived from the use of it by the cultivator. It has no relation to the cost of supplying the water." While the Plan does not directly relate the water rate to the cost of irrigation, water charges are still considered an important source for the recovery of costs as can be seen from its suggestion that the old revenue structure should be modified in the light of the expensive nature of new projects and the increased cost of maintenance and operation of the new projects, if the new projects are to satisfy the productivity test.

Methods of Water Rate Fixation

One of the major methods in fixing water rates is the net benefit available to the cultivators from the use of water supplied. The additional net benefit accruing to the farmer on account of the use of irrigation water is measured by the difference between the net benefit received 'before' and 'after' the use of canal water. In any system of water rate, the upper limit to the ability of a crop to bear the water rate is indicated by the entire net benefit to the irrigator from his irrigated crop. However, in practice, it would be desirable to recover through water rate only a portion of the net benefit so as to provide incen-

26 Report of the Taxation Enquiry Commission 1953-54, Vol. III, *op. cit.*, pp. 251-253.

tive to the farmer to use irrigation water. But determination of net benefit presents many difficulties. The use of irrigation water is invariably accompanied by the use of other factor inputs such as fertilizers, employment of additional labour, etc., so that it may be difficult to isolate the net benefit as flowing from irrigation alone. Thus with this limitation in ascertaining 'net benefit,' it is suggested that a simpler method of fixing the water rates would be to determine them on the basis of the "value of crop" grown. It is argued that a water rate which varies with the value of the market price of crops, is equitable and also provides scope for variation in the charges according to the quantity of water used by different crops. The Report of the Maharashtra State Irrigation Commission discusses at length the problem of determining the net benefit as the basis of water rate fixation. The Report points out that while it may not be possible to compute the net value of additional agricultural production due to irrigation, it may be taken for granted that in normal years there exists a relationship between gross and net income and broad calculations could be made on the basis of estimates of only gross value of irrigated crops. Thus, the factors that may be taken into consideration in formulating water rates for individual crops would be, firstly, the cost of irrigation water required by the crop and secondly, the level of average gross income obtained from the crop under the usual conditions of fertility, supply of manure, supply of water, level of efficiency of cultivation, prices, etc.[27]

In India, water charges vary both in the method and the rates of levy with the result that there is multiplicity both in principles and the rates of assessment. Broadly, two methods of charging for water may be distinguished. They are, firstly, the optional system of levy and secondly, the compulsory system of levy. The various systems of charging for water that prevail are an application in principle of either of these two systems.

Under an optional system of levy, the water rates are fixed by the irrigation authorities and the cultivators are free to use or not to use the irrigation facilities at the rates fixed. Under a system of compulsory levy, there is a compulsory water charge

27 Report of the Maharashtra State Irrigation Commission, *op. cit.*, p. 70.

on each acre of land served by the canal system, whether water is used or not used. Under this system, each cultivator is entitled to a certain maximum supply of water and he can get extra water over and above the water allotted for an additional payment. Water rates are determined for broad soil types such that the average water rate is equal to the average cost per irrigated acre at full capacity. Among the many advantages of a system of compulsory levy, the important ones are that the compulsory nature of payment for water induces the cultivators to fully utilise the capacity created, the average charge is the lowest and further, the full cost of providing water can be recovered.

Among the various systems of levying water charges, a few important ones may be noted. They are volumetric rate, consolidated rate, differential rate, occupier's rate and agreement rate.

Volumetric rate is the charge levied according to the volume of water actually supplied. Since water is charged according to the volume used, this system may lead to the economical use of water. However, though more scientific in principle than any other system, this system is not generally recommended, since it involves a large initial investment for installing meters to measure the quantity of water supplied. The supervisory staff also has to be extensive. There is a danger of malpractices on the part of petty officials. More important than these reasons is the fact that as the amount of water actually used for irrigation depends on the rainfall in any particular year, the demand for water may fluctuate considerably from year to year, thereby resulting in heavy fluctuations in the annual irrigation receipts of the State.

Under the system of charging a 'consolidated rate,' water charge is consolidated with the land revenue assessment and is fixed on the settlement principle. On the side of merits, this system minimises the number of taxes collected and thereby facilitates and economises the collection of taxes. Further, a minimum rate of reimbursement is ensured, since payment of water charges is rendered more or less compulsory. However, since water rates are fixed on settlement principle, it may become difficult to increase the rates as and when it is found that the capacity

of the crop to pay has increased. This system is prevailing in the South, especially on the older works in the States of Madras, Mysore and former Hyderabad.

Under the system of a 'differential rate,' the principle is that when a dry land is irrigated from Government sources, the water charge should correspond to the difference between the wet rate and the dry rate of assessment of the corresponding land. The merits claimed for this system are that it enables a charge in proportion with the yield of the land and further, the inadequacies and defects of a method of fixed water rates can be eliminated. However, this system can be applied only in those areas where the necessary land classification has been made. The Taxation Enquiry Commission (1953-54) described this system as "unsound in theory and clumsy in practice." This system was adopted on some of the older works in Andhra Pradesh and Madras. However, in view of the administrative difficulties involved, this system is being replaced by a system wherein the water charge is fixed on a flat rate basis and varying according to the nature of the crop grown, etc.

Under the system of charging an "occupier's rate," water charges are related to the nature of the crop grown and are fixed for the area actually irrigated. The rates for different crops are based mainly on the quantity of water normally required by the crop, the scarcity or abundance of supply at the time, and value of the crop. Under this system, though the method of charging ensures equity, however, economy in the use of water may not be achieved, since charges depend on the extent of area irrigated and nature of crops grown and there might be wastage of water due to excessive watering. Further, the Taxation Enquiry Commission pointed out that "under conditions of competitive demand, it fails to secure optimum revenue to the government." This system of levy is followed generally all over India, especially on the new irrigation works.

Under the "agreement rate" system, rates are fixed by agreement for a certain period of years and water rates have to be compulsorily paid whether water is taken or not. In view of the long-term agreements and the compulsory nature of levy, the water charges are generally low. This system is the result

of local conditions and requirements in certain regions, as in the deltaic regions of Orissa, West Bengal, parts of Bihar and Madhya Pradesh, where climatic conditions render it doubtful whether the cultivator in any particular season would demand water or not. In these regions, attempts have been made to induce the cultivator to take a lease for a period of years. For instance, in Orissa, the present practice is to give long-term block leases extending up to ten years. This system is conceived to bring in a minimum return so that the cost of maintenance of works could be met.

Revision of Existing Rates

Irrigation works should be, by and large, self-supporting. But, at present, irrigation works are running at a loss. In 1950-51, the net profit from irrigation undertakings was Rs. 4 crores. In 1955-56, there was a loss of Rs. 5.1 crores. This loss is estimated to have increased to Rs. 19.3 crores at the end of the Second Plan. On the basis of recent estimates given by State Governments to the Planning Commission, it is estimated that at the existing level of water rates, the loss to the irrigation undertakings during the Third Plan would be of the order of Rs. 135 crores. A recent study estimated the loss to the irrigation systems in India at Rs. 38.75 crores in 1965-66, Rs. 41.53 crores in 1966-67 and Rs. 46.25 crores in 1967-68.[28]

Thus, there exists a case for revising water rates in all the States in India. The case arises primarily owing to the following reasons: firstly, a huge amount has been invested in these undertakings and attempts should be made to prevent recurring losses. Secondly, a substantial part of the funds for the development of irrigation which could have been found from the internal resources of these undertakings will now have to be found from other sources. Thirdly, the present incidence of water rates is found to be low. And fourthly, the prevailing higher prices of crops have raised the paying capacity of the farmers.

Recently, water rates have been revised upwards in a number of States and the State Governments are contemplating a further

28 "Mobilisation of Resources by Increase in Irrigation Water Rates," J. P. Naegamvala and N. K. Dikshit, *Indian Journal of Power and River Valley Development*, Vol. XVIII, No. 7, July, 1968, pp. 286-287.

increase in the future. In Andhra Pradesh, in 1956, water rates were increased by 25 per cent, and further by 50 per cent in 1957. An additional assessment of 13¾ per cent of the amount of land revenue assessment payable on wet lands was levied in 1956 to meet the increasing cost of maintenance and repair of works. This additional assessment was further increased to 37½ per cent in 1957. In Bihar, water rates were doubled in 1956. In Gujarat region, uniform water rates for all the irrigation works have been introduced step by step, from June, 1959. In Uttar Pradesh, the rates were raised by 50 per cent in 1944, by another 50 per cent in 1950 and then again by 50 to 100 per cent in 1953. However, owing to the fall in prices in 1954-55, a rebate equivalent to 50 per cent of the increase effected in 1953 was allowed. In Rajasthan, for the projects constructed after 1952, new schedules of rates have been prescribed in 1956. Water rates obtaining on old tanks were increased by about 30 to 40 per cent over the old rates. Water rates ranging below Rs. 5 have been raised to Rs. 8. The State Government is considering a further upward revision. In West Bengal, the rates on the old Damodar canals were raised from Rs. 4.1 to Rs. 5.5 per acre from 1952-53. New water rates have been introduced from 1958-59 in the irrigable commanded area of the old Damodar and Eden Canal Systems.[29] The gross receipts from irrigation rates in the different States are estimated at Rs. 170 crores during the Third Plan period.

As noted earlier, the annual income of an irrigation project should cover the annual cost of supplying water. In spite of recent upward revisions in the water rates in several States, the losses have tended to increase. A study[30] on the working of irrigation undertakings in India has examined the various aspects of the problem. The present financial losses of irrigation works seem to be due to high construction costs and costs of maintenance and operation. With the completion of a project and commencement of irrigation, certain costs, more or less of a fixed nature, on establishment, repairs and maintenance, depreciation and interest charges, have to be incurred annually, whether the

29 Price Policy of Irrigation Undertakings: A Preliminary Study, Planning Unit, Indian Statistical Institute, New Delhi (1961) (unpublished).

30 *ibid.*

water made available is utilised or not utilised. The cost of providing water per acre depends on the degree of utilisation of the potential created. Thus, the higher the proportion of utilisation, the lower will be the cost of supplying water per acre and vice versa. The capital cost per irrigated acre of First and Second Plan schemes varied from as low as Rs. 189 in Uttar Pradesh, Rs. 193 in Bihar, Rs. 263 in the Punjab, to as high as Rs. 669 in Madras, Rs. 731 in Mysore and Rs. 836 in Maharashtra. Similarly, in 1960-61, the maintenance and operation costs per acre varied from as low as Rs. 2.34 in Madras, Rs. 3.18 in Kerala, Rs. 3.41 in Andhra Pradesh to as high as Rs. 7.98 in Maharashtra, Rs. 12.0 in Mysore and Rs. 15.06 in Gujarat. The low working cost per irrigated acre in Madras and Andhra Pradesh is due to almost cent per cent utilisation of irrigation potential. In Gujarat, Mysore and Maharashtra, the working costs are considerably higher owing to the low utilisation at present. Similarly, on the side of benefit also, present rates seem to be low. The average receipts per irrigated acre as a proportion of the value of net additional output due to irrigation were found to be low in most of the States. Thus, excepting for Maharashtra and Mysore, where the corresponding proportion was 17 and 12 per cent respectively, it was as low as 2 per cent in Andhra Pradesh, Bihar, Kerala and Madras, 3 per cent in Orissa, Rajasthan and West Bengal, 4 per cent in Madhya Pradesh, 6 per cent in the Punjab and 9 per cent in Gujarat.

Net profits of irrigation undertakings can be increased by increasing water rates or lowering costs or both. The study referred to earlier[31] has suggested several steps to improve the financial position of irrigation works. Among other things, it has suggested a compulsory system of irrigation levy for bringing about fuller utilisation of potential created and thereby minimising the cost of providing water per acre. In view of the low incidence of prevailing rates, the study has proposed an upward revision in the existing rates. On the basis of the proposed water rates, which have been approximated at 10 per cent of gross value of output for various crops in different States, it is seen that the estimated loss of Rs. 135 crores by the end of the Third Plan,

31. Price Policy of Irrigation Undertakings: A Preliminary Study, *op. cit.*

could be reduced to Rs. 38 crores. A further reduction to the extent of Rs. 15 crores can be effected through measures such as increasing the efficiency in water use and water conservation.

With a view to suggesting ways and means of improving financial returns from irrigation projects, the Union Ministry of Irrigation and Power set up a Committee of State Ministers under the Chairmanship of Shri S. Nijalingappa, the then Chief Minister of Mysore, in April, 1964. In its Report submitted in December, 1964, the Committee recommended that water rates should be levied on the basis of a suitable percentage of the additional net benefit to the farmer from an irrigated crop. These rates may be fixed at 25 to 40 per cent of the additional net benefit, keeping in view factors like rainfall, water requirement, yield and value of crop, etc. Where it is not feasible to work out the additional net benefit, water rates may be fixed at 5 to 12 per cent of the gross income to the farmer from the irrigated crop. The Committee suggested that water rates should be reviewed every 5 years. Compulsory water charges, sufficient to cover at least the maintenance and operation costs of irrigation works, should be made applicable to the entire area served by irrigation projects irrespective of whether water is drawn by the cultivators or not.[32] The recommendations of the Committee have already been commended to State Governments for action. Because of the comprehensiveness of these recommendations, it may not be possible for all of them to be implemented immediately. A phased programme for their implementation should, therefore, be adopted by each State. Through a proper schedule of irrigation rates, it would be possible to collect a larger share of the profits accruing to the cultivators of commercial crops. A recent study estimated the annual revenue that might be expected from enhancement of water rates on the basis of a maximum limit of 12 per cent of the gross income recommended by the Nijalingappa Committee for three principal crops at about Rs. 187 crores—Rs. 95 crores for rice, Rs. 26 crores for wheat and Rs. 66 crores for sugarcane[33]—as against the revenue of Rs. 75 crores expected from the maximum

32 Fourth Five-Year Plan—A Draft Outline, Planning Commission, Government of India (1966), p. 88.

33 *Indian Journal of Power and River Valley Development*, July, 1968, *op. cit.*, pp. 288-290.

water rates prevailing for these crops at present. It would, therefore, appear that revenue could be doubled by upward revision of water rates keeping in view the maximum limit for such increase as recommended by the Committee.

Need to Link Water Rates with Other Agricultural Taxes

A question is often posed that there are different groups of farmers in the country who utilise irrigation facilities differently and if these farmers are charged uniform rates, this might lead to disparities in the benefits derived from irrigation. It is suggested that this anomaly could be removed in two ways: firstly, by levying water rates on a graduated basis by charging lower rates up to a particular size of holding which could cover the large stratum of cultivators at the low level, and by a progressive increase in rates on higher slabs; and the second alternative is to charge a uniform water rate for all the irrigators and tap the higher benefits of cultivators with large-sized holdings through the agricultural income-tax. The latter step would necessitate lowering of the present exemption limit for the purposes of agricultural income-tax. It is pointed out that the question of water rates is primarily a problem of mobilising the resources of the rural sector and cannot be studied in isolation from the issues of land revenue and agricultural income-tax.[34]

Betterment Levy

While the maintenance costs of an irrigation work are expected to be taken care of by water charges, a betterment levy is conceived as a measure of recouping the capital invested and recovering depreciation charges. The two major objectives of levying a betterment charge are stated to be, firstly, appropriating a part or the whole of the unearned increment in the value of the land due to the construction of a project, and secondly, to recoup a part or whole of the capital outlay on an irrigation project from the persons benefiting from it, to provide capital resources for extending irrigation to new areas. The principle behind the betterment levy is that the introduction of irrigation projects is generally followed by an increase in the annual and

34 National Council of Applied Economic Research: Criteria for Fixation of Water Rates and Selection of Irrigation Projects (1959), p. 77.

capital value of lands coming under the command of a project. Such increase in the value of land is not the result of the individual cultivator's effort, but is rather a result of public investment. A considerable unearned increment accrues to owners of land within the project area which they would not have enjoyed without the facility of irrigation provided at the expense of the State. While it is a sound principle to tax the unearned increment in land values, such a levy is supposed to fulfil other desired objectives, such as the stabilisation of land values, and provide additional resources to Government to liquidate at least a part of the capital costs of the projects.

The three main aspects that have to be reckoned with in the determination of betterment levy are: (*a*) fixation of the base value from which the increase in value may be calculated; (*b*) determination of the increase in value; and (*c*) determination of the percentage of betterment value that the Government should realise from the beneficiary.

On the recommendation of the Planning Commission, legislation has been passed in several States to introduce betterment levy in the areas benefited by works of improvement. In Bombay, the Irrigation Act of 1879 was amended in 1950 to provide for the levy of betterment charge and irrigation cess; the former was meant to appropriate part of the increment in the value of lands and the latter primarily to meet the working expenses of the canal. In the Punjab, in 1952, Punjab Betterment Charges and Acreage Act was enacted in order to recover betterment charges and acreage rates on lands in any irrigation scheme which has come into operation since August, 1947. In Madras, an Irrigation Act for betterment contribution was passed in 1952. The Act provides for levy of betterment contribution on lands benefited by any irrigation or reclamation work constructed since January, 1943. The Lands Special Irrigation Charges Act in Rajasthan seeks to levy betterment fees and acreage rates as well as water cess in respect of all lands included in irrigation schemes.

The major difficulty in appraising the betterment levy arises from the fact that there is no uniformity in the scales and methods of the levy among the different States. In some States

like Madras, Andhra Pradesh and Mysore, the increase in the value of land is the sole criterion for assessing the betterment levy. In other States like the Punjab, Rajasthan and erstwhile Pepsu, while determining the rate of levy, factors such as the type of irrigation, improvement in irrigation and the extent of betterment, are also taken into consideration.[35]

The Madras Act provides that the land benefited by the construction, expansion or alteration of any work shall be divided into suitable classes, and the annual increase in the gross produce of each class shall be estimated and valued with reference to the average prices prevailing during the three years immediately preceding the completion of the work. Ten times the annual increase in gross produce shall be deemed to be the increase in the capital value. The betterment levy is calculated at half the excess of this increase over the cost of making the land fit for advantageous irrigation. A similar procedure has been provided for in the Andhra Act except that twenty-five times the net additional income less the expenses for making the land fit for advantageous cultivation shall be deemed to be the increase in capital value.

In most of the States, maximum limits for betterment levy have been specified. The general presumption is that the betterment levy should not exceed 50 per cent of the increment in value whatever be the basis for computation of such incremental value. While States like Andhra Pradesh and Madras aim at appropriating 50 per cent of the net increased value, on perennial lands commanded by the Bhakra Project the betterment levy comes nearer to one-fourth of the increase in capital value.

One feature of some of the Acts in the States is that as an alternative to payment of the levy, provision is made for the surrender of a part of the holding. Rebates are provided for if the whole of the levy is paid in a lump sum. If paid in instalments, which vary generally from twenty to thirty at the maximum, an interest rate is charged. Only in former Hyderabad, the Act did not provide for charging interest.

35 Report of the Taxation Enquiry Commission 1953-54, Vol. III, *op. cit.*, p. 257.

Though legislation to recover a betterment levy has been passed in most of the States, in practice, it is seen that action taken for implementing the laws enacted for the purpose has been half-hearted and has lagged far behind expectation. This feature is borne out by the actual realisations of the levy as against the expectations entertained. During the Second Plan, the amount realised was only Rs. 3.5 crores as against the initial estimate of Rs. 47 crores. As regards flood cess, the Governments of Andhra Pradesh, Assam, Bihar, Jammu & Kashmir, Kerala and Mysore have enacted the necessary legislation, while the question is under consideration in Madhya Pradesh, Maharashtra, Gujarat, Punjab, Orissa, Rajasthan, Uttar Pradesh and West Bengal. The target of total receipts from betterment levy set out in the Third Plan is Rs. 39 crores and in order to achieve this target, promotion of necessary legislation in the remaining States where legislation is not enacted so far, and enforcement of legislation where it has already been passed, are considered as essential steps. The anticipated realisation in the first three years of the Third Plan was only Rs. 5.76 crores.[36]

The main reason for the lapse in recovering the levy in different States is due to the difficulty in assessing the levy as per the principle of capital appreciation in the value of land. The difficulties arise owing to the conditions obtaining in the prevailing irrigation system. Firstly, under the present optional system of irrigation there is neither a compulsion to the land holder to take water nor a permanent commitment on the part of the Government to supply water as desired. Secondly, it is not prescribed that a particular land shall grow a particular crop only. And thirdly, with the enactment of the tenancy laws and implementation of other land reforms, the market for land has practically ceased to exist making it difficult to ascertain the market price for land.[37] These conditions have rendered the calculation of the levy difficult.

The justification for such a levy lies in the need for raising additional resources to finance extension of irrigation in the

36 The Third Plan Mid-term Appraisal, Planning Commission, Government of India (1963), pp. 105-106.

37 Report of the Maharashtra State Irrigation Commission, *op. cit.*, p. 94.

future. In view of the difficulties involved in assessing and recovering the betterment levy, it is suggested that the purpose in view will be served by charging a higher consolidated water rate, instead of levying a separate betterment charge. Recently, this question was posed before the State Governments as to whether they should have the present water rates combined with betterment levy, or a single completely revised settlement or a betterment levy-cum-revised settlement. This problem was dealt with at length by the Madras State when it received instructions from the Planning Commission regarding betterment levy in October, 1950. A Committee was appointed under the Chairmanship of Shri C. Subramaniam. The Committee recommended the introduction of an element of progression by way of a surcharge adjusted to the ascertained ability to pay, and after proposing an additional surcharge on commercial crops, over and above this charge, the Committee suggested the linking of both the standard assessment and the water rates, whether on protective or productive irrigation works, to the price index of paddy in the Madras State. The Maharashtra State Irrigation Commission in its Report to the Maharashtra State in 1962, recommended 'increased productivity' as the only practical basis for levying such a charge, to be levied on all lands irrigated by Government works whether new or old. The Commission recommended a consolidated betterment-cum-depreciation charge equivalent to 20 per cent of the water rate, the period of recovery being unlimited. According to the Commission, a single consolidated irrigation charge, including both the water rate and the betterment levy may be charged to facilitate the convenience in collection.

CONCLUSION

In conclusion, it may be said that the present losses incurred by the irrigation undertakings can be reduced to a considerable extent with a fuller utilisation of the irrigation potential created and their financial position can be improved by revising upwards the existing irrigation rates wherever they are found to be low. The losses can also be further reduced by minimising the working costs of the undertakings. In the final analysis, an irrigation undertaking should be self-supporting and pay its way without burdening the general tax-payer.

CHAPTER XVI

FOREIGN TRADE IN AGRICULTURAL COMMODITIES*

TRENDS IN EXPORTS AND IMPORTS OF AGRICULTURAL COMMODITIES

Foreign trade plays a crucial role in the economic development and planning of developing economies. Through foreign trade are secured the capital goods needed for increasing investments. The import content of capital formation is usually quite high even in a country with a rather diversified economy such as India; and it tends to increase in a period of intensive industrialisation so that the capacity to import capital goods becomes a strategic factor and one of the main determinants of the rate of economic growth.

Foreign trade in agricultural commodities does not have in India the importance it has in some other countries of South-east Asia. In fact, total exports formed less than 5 per cent of the national income of India in 1966. However, agricultural commodities have considerable importance in the composition both of imports and exports of the country. Table I gives the share of agricultural commodities in the total exports of all merchandise by sea and air. This table includes a separate item representing the agricultural content of some exported manufactures (cotton textiles, jute goods, woollen manufactures and leather goods). Exports of agricultural commodities, as a percentage of total exports of all merchandise, have fluctuated between the range of 38 and 52 during the last decade. The average percentage during the second half of the decade has been distinctly higher than that in the first half. It is somewhat remarkable that such a trend should have existed in spite of the considerable diversification of the national economy which has taken place as a result of planned economic development. If the figures of the agri-

* This chapter is largely based on Professor M. L. Dantwala's Paper entitled "Economic Development and the Role of Agricultural Sector in India," submitted to the ECAFE in 1964.

TABLE I

SHARE OF AGRICULTURAL COMMODITIES IN TOTAL EXPORTS OF ALL MERCHANDISE BY SEA AND AIR

(*Rs. in crores*)

	1949-50	1951-52	1955-56	1956-57	1960-61	1961-62†	1965-66†
A. Agricultural commodities excluding agricultural content of exported manufactures	192.3	266.9	305.2	295.6	284.5	310.2	330.4
B. Agricultural content of exported manufactures*	88.4	152.7	100.5	106.2	116.3	—	—
C. All agricultural products (A+B)	280.7	419.7	405.7	401.8	400.8	—	—
D. Total export of all merchandise	472.1	701.8	584.7	593.9	632.9	660.3	809.5
E. (i) A as percentage of D	41	38	52	50	45	47.0	40.8
(ii) B as percentage of D	19	22	17	18	18	—	—
(iii) C as percentage of D	59	60	69	68	63	—	—
F. Full f.o.b. value of exported manufactures included in B	255.9	360.1	208.9	202.6	247.4	—	—
G. F as percentage of D	48	51	36	34	39	—	—

Source: R. N. Poduval and B. P. Dutia, "Prices, Trade and Marketing of Agricultural Commodities in India" (revised paper unpublished).

* Items included are cotton textiles, jute goods, woollen manufactures and leather goods only. Adjustments have been made in their total f.o.b. value to exclude the element of processing of their agricultural content and of the imported raw materials contained in them.

Note: Data on foreign trade in agricultural commodities for the years subsequent to 1956-57 are not strictly comparable with those for earlier years because of the changes in classification of commodities adopted in 1957. However, special care has been taken to see that the coverage of items remains the same and as such figures of latter years compare well with those for earlier years.

† Figures for 1961-62 and 1965-66 are not strictly comparable with those for earlier years as no adjustments have been made in the case of the former and are taken from Economic Survey of Indian Agriculture 1965-66, Directorate of Economics and Statistics, Ministry of Food, Agriculture, Community Development and Co-operation, Government of India (1967).

cultural content of some of the exported manufactured commodities are included, the percentage share of the combined group rises above 60. This is a sure indication of the importance of agricultural production in the national economy. During the Third Plan period, the share of agricultural exports in the total value of exports of all commodities sharply declined from 49 per cent in 1962-63 to 40.8 per cent in 1965-66 largely due to the decline in the value of exports of tea, sugar and sugar preparations, feeding stuff for animals, other commodities, vegetable oils, fruits and vegetables, raw wool and other animal hair, cotton, coffee and cocoa.

Information regarding the share of agricultural commodities in the total imports is given in Table II. There is a distinct trend showing the decline in the share of agricultural commodities in total imports. During the last few years, agricultural imports have constituted about one-third of the total imports, indicating the increasing importance of the imports of non-agricultural commodities, particularly machinery in India's national economy. The analysis of the trends in exports and imports of agricultural commodities suggests that India is in a stage in which the structure of her production is gradually changing but it has not yet reached the stage in which the benefits of industrialisation manifest themselves through the diversification of the export trade.

Balance of Trade

If the balance of trade is struck for agricultural commodities only, the outcome appears to vary from year to year and there is no distinct trend (Table III). The negative balance has been as high as Rs. 254.2 crores in 1951-52 and the positive balance is as high as Rs. 144.9 crores in 1955-56. After two years of a small positive balance in 1958-59 and 1959-60, the year 1960-61 witnessed again a negative balance of Rs. 51.1 crores. The balance of trade in agricultural commodities showed a surplus during the first three years of the Third Plan period but it turned out to be negative during the last two years, the negative balance being as high as Rs. 149 crores in 1965-66. The fluctuating position of the trade balance in agricultural commodities is undoubtedly related to the harvest conditions in particular years.

TABLE II

SHARE OF AGRICULTURAL COMMODITIES IN TOTAL IMPORTS

(*Rs. in crores*)

Year	Value of imports of			Share of agricultural goods in total imports (column 2 as per cent of column 4)
	Agricultural goods	Non-agricultural goods	Total merchandise	
1949-50	225.7	422.3	648.0	34.8
1951-52	521.1	422.0	943.1	55.3
1955-56	160.3	518.4	678.7	23.6
1956-57	168.6	671.8	840.4	20.1
1960-61	335.6	734.6	1,070.2	31.4
1961-62	285.9	804.4	1,090.3	26.2
1965-66	479.4	914.6	1,394.0	34.4

Note: See footnote to Table I.

Source: As given in Table I.

TABLE III

AGRICULTURAL EXPORTS AND IMPORTS

(*Rs. in crores*)

Year	Exports	Imports	Balance (Exports—Imports)
1950-51	248.6	285.2	— 36.6
1951-52	266.0	521.1	—254.2
1952-53	241.0	284.4	— 43.4
1953-54	217.9	186.9	+ 31.0
1954-55	300.8	229.2	+ 71.6
1955-56	305.2	160.3	+144.9
1956-57	295.6	168.6	+127.0
1957-58	256.9	200.7	+ 56.2
1958-59	279.2	277.5	+ 1.7
1959-60	303.7	296.4	+ 7.3
1960-61	284.5	335.6	— 51.1
1961-62	310.2	285.9	+ 24.3
1962-63	337.4	322.9	+ 14.5
1963-64	366.9	358.4	+ 8.5
1964-65	364.1	464.7	—100.6
1965-66	330.4	479.4	—149.0

Source: As given in Table I.

Domestic Production and Imports

Table IV gives information regarding the domestic production and imports of cereals, production of wheat and cotton along with the imports and exports of these commodities from 1950-51 to 1966-67.

It will be observed from the table that the percentage of imports of cereals to domestic production has varied considerably from year to year. It was as high as 10.50 per cent in 1950-51 and 8.47 per cent during 1951-52. In the years 1953-54 to 1955-56 when domestic production achieved a marked increase, the percentage of imports was distinctly lower. Since 1956-57, however, imports of cereals have consistently remained over 3 million tonnes per year. During the ten years ending 1965-66, cereal imports have varied between 5 to 17 per cent of domestic production. These imports have imposed a heavy burden on the limited foreign exchange resources of the country at a time when there was a severe strain on it. The annual average value of foodgrain imports has been as high as Rs. 150 crores and Rs. 281 crores during the five years ending 1960-61 and 1965-66 respectively. It may, however, be mentioned that the bulk of these imports has been under the PL 480 Agreement on a loan basis with payments in Indian currency.

As is well known, wheat constitutes the major component of the foodgrain imports. The percentage of wheat imports to domestic production has also varied considerably from year to year, but the percentage has remained consistently very high during the ten years ending 1965-66, varying from 27 per cent in 1961-62 to 75 per cent in 1965-66. It is thus obvious that India has come to depend on imports for more than half of its consumption of wheat and this is tending to become almost a built-in feature of India's wheat economy. The high level of imports corroborates the earlier evidence regarding the slow or negligible increase in the production of wheat during the last ten years. The situation, however, appears to be changing dramatically.

In regard to cotton, India imports as well as exports this commodity, but whereas the imports consist of medium and long-staple cotton, the exports are mainly of the short-staple variety.

TABLE IV

DOMESTIC PRODUCTION AND IMPORTS (AND EXPORTS) OF SOME IMPORTANT AGRICULTURAL COMMODITIES

	1950-51	1951-52	1955-56	1956-57	1960-61	1961-62	1962-63	1963-64	1964-65*	1965-66*	1966-67†
					Cereals (in million tonnes)						
Domestic production	45.74	46.40	55.80	58.30	69.31	70.95	68.62	70.57	76.56	62.23	66.13
Imports	4.81	3.93	1.44	3.65	3.49	3.64	4.56	6.27	7.46	10.36	8.67
Percentage of imports to domestic production	10.50	8.47	2.58	6.26	5.03	5.13	6.64	8.88	9.74	16.65	13.11
					Wheat (in million tonnes)						
Domestic production	6.83	6.34	8.76	9.40	11.00	12.07	10.78	9.85	12.29	10.42	11.53
Imports	3.02	2.51	1.10	2.90	3.09	3.25	4.07	5.62	6.58	7.78	6.35
Percentage of imports to domestic production	44.21	39.60	12.56	30.85	28.10	26.93	37.75	57.05	53.54	74.66	55.07
					Cotton (in million bales of 180 kgs. each)						
Domestic production	2.91	3.13	4.03	4.75	5.22	4.58	5.23	5.42	5.66	4.76	4.93
Imports	1.26	1.22	0.67	0.75	1.10	0.80	0.86	0.65	0.93	0.53	0.78
Exports	0.08	0.13	0.69	0.23	0.30	0.33	0.33	0.27	0.24	0.17	0.17
Net imports	1.18	1.09	(0.02)	0.52	0.80	0.47	0.53	0.38	0.69	0.36	0.54
Percentage of net imports to domestic production	40.55	34.82	—	10.95	15.12	10.26	10.13	7.00	12.20	7.56	10.95

Sources: Bulletins on Food Statistics, Ministry of Food and Agriculture, Government of India; Cotton in India (Annual Series), Indian Central Cotton Committee; and Report on Currency and Finance for the Year 1966-67 and 1967-68, Reserve Bank of India, Bombay (1967 and 1968).

* Partially revised estimate. † Final estimate.

The figures in the table which are given in terms of number of bales may not, therefore, reflect the relative value of exports and imports. The percentage of imports to domestic production of cotton has been worked out on the basis of net figures, *(i.e.,* imports minus exports) which is perhaps not quite appropriate in view of the marked difference in the qualities of cotton which is exported and imported. Bearing this limitation in mind, the percentage figures of net imports to domestic production once again show wide variation from year to year. Variations in net imports showed no consistent relation to domestic production. The percentage of imports to domestic production was very high during 1950-51 to 1951-52. This rate came down in 1954-55 and in 1955-56 there were no net imports of raw cotton. Since then, the imports have been at a fairly low level except in the year 1959-60 when the percentage rose to 27.66 because of the extremely poor domestic production during that year. Like the imports of foodgrains, imports of cotton also constitute a severe burden on India's limited foreign exchange resources. The value of the imports during the ten years ending 1965-66 has varied from Rs. 31 crores to Rs. 75 crores and the annual average value of the imports amounted to Rs. 55 crores during the Third Plan period.

The analysis of imports for two major categories of agricultural produce, namely, cereals and cotton, shows that the increase in domestic production has not been able to keep pace with the increased domestic requirements. With a better performance in the production of these two commodities, the national economy would have benefited considerably, particularly in regard to savings in foreign exchange which was badly needed for industrial development.

COMPOSITION OF EXPORTS AND IMPORTS

The percentage shares of important commodities in agricultural exports and imports are given in Tables V and VI. Commoditywise, the most important export commodity is tea. In recent years, the export of cashew kernels and oilcakes has assumed importance. The share of tea in the total agricultural exports has varied from 42.5 to 49.8 per cent during the Second Plan period. Tea emerged as an important foreign exchange earner

TABLE V

PERCENTAGE SHARE OF INDIVIDUAL COMMODITIES AND GROUPS IN THE TOTAL AGRICULTURAL EXPORTS

Commodities	1950-51	1951-52	1955-56	1956-57	1960-61	1961-62	1962-63	1963-64	1964-65	1965-66
Tea	35.3	39.0	38.9	49.8	43.4	39.4	38.2	33.6	34.2	34.8
Coffee	0.5	0.2	2.5	2.3	2.5	2.9	2.3	2.3	3.7	3.9
Cotton (Raw)	7.6	8.7	14.1	7.0	4.1	6.6	5.1	4.6	3.9	4.0
Seeds including oilseeds	7.6	3.3	1.4	0.3	1.8	1.5	1.2	1.2	0.6	0.1
Oilcakes	—	—	1.8	0.6	5.0	6.1	9.7	10.0	11.2	10.9
Tobacco	6.7	7.0	4.2	4.9	5.5	4.8	5.6	6.1	7.1	6.4
Vegetable oils	10.2	8.6	12.2	5.4	3.0	1.9	3.9	5.4	1.9	1.2
Spices	11.0	11.6	3.7	3.1	5.8	5.6	4.1	4.4	4.6	7.0
Fruits and Vegetables	4.8	5.6	5.4	6.2	9.2	8.2	7.9	8.2	9.8	10.1
Others	16.8	16.0	15.8	20.4	19.7	23.0	22.0	24.2	23.0	21.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: As given in Table I.

TABLE VI

PERCENTAGE DISTRIBUTION OF THE AGRICULTURAL IMPORTS AMONG DIFFERENT COMMODITIES OR GROUPS

Commodities	1950-51	1951-52	1955-56	1956-57	1960-61	1961-62	1962-63	1963-64	1964-65	1965-66
Foodgrains	38.0	49.4	10.1	4.8	43.2	40.9	44.7	50.0	60.7	64.5
Cotton (Raw and Waste)	35.3	26.3	35.8	30.6	24.4	21.9	17.6	13.6	12.5	9.6
Jute (Raw)	9.5	12.9	12.1	5.2	2.3	2.2	1.0	0.6	1.6	1.2
Others	17.2	11.4	42.0	59.4	30.1	35.0	36.7	35.8	25.2	24.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: As given in Table I.

inasmuch as in the earlier part of the decade, its percentage share was consistently below 40. Next in importance is raw cotton whose share in the exports of agricultural commodities has varied between 4 to 7.7 per cent during the Second Plan. Unlike tea, the importance of raw cotton exports has declined. Another commodity which has shared this fate is oilseeds. Its share in the total agricultural exports which was as high as 7.6 per cent during 1949-50 and 1950-51, has declined to about 1 per cent. The relatively very high level of prices of oilseeds during the decade shows that the production of this commodity has not been commensurate even with domestic requirements, leaving aside its export potential.

During the Third Plan period, some significant changes occurred in the commodity composition of agricultural exports. The share of tea in the total agricultural exports declined from 39.4 per cent in 1961-62 to 33.6 per cent in 1963-64, though its share marginally improved to 34.8 per cent in 1965-66. In the case of both tea and coffee, it cannot be assumed that a larger production would have necessarily resulted in larger exports as the latter would depend on the conditions in international markets. Fruits and vegetables and spices showed a consistent rising trend in the share of agricultural exports during the Third Plan period. The share of oilcakes and tobacco in the total agricultural exports showed a consistent increase until 1964-65 but in 1965-66, their share declined to 10.9 per cent and 6.4 per cent respectively. Exports of cotton reached a peak level in 1961-62, but this level could not be maintained in the succeeding years of the Third Plan. In regard to sugar, India was a net importer till the year 1955. Of late, however, she has started exports of limited quantities which are earning some valuable foreign exchange. This has been possible mainly because of heavy subsidies given for these exports. The spurt in the domestic prices of all oilseeds since the latter half of 1963 adversely affected India's capacity to export oilseeds at competitive prices. In particular, the exports of groundnut, groundnut oil and castor oil fell sharply since 1964-65. The virtual disappearance of groundnut oil and groundnut from the export list was because of the deliberate policy of banning these exports by the Government of India.

Export of agricultural commodities received a serious set-back in 1966-67. The main factors contributing to the set-back were (1) the unprecedented drought conditions which reduced the quantum of agricultural products available for exports and (2) the balance of payments difficulties in the U.K. since 1964. Combined with these factors, devaluation of the rupee[1] conferred no net advantages to the exports of agricultural products from India. On the contrary, the devaluation measure upset the normal trade channels specially in our trade with the East European countries. Some corrective steps were however taken by Government to halt the decline in agricultural exports. These include reduction of export duties on higher priced teas to 20 per cent *ad valorem* and on jute manufactures and removal of export duties on coir products. The post-devaluation export promotion measures taken by Government began to show results especially during the latter half of 1967-68 when agricultural exports showed a degree of buoyancy. A part of the increase in exports is attributable to the good agricultural production. Among the major items in which increases in exports were registered were nuts and kernels, vegetable oils, tobacco, spices, raw cotton, tea and coffee. The value of exports of nuts and kernels increased by nearly five-fold from Rs. 36 lakhs in 1966-67 to Rs. 172 lakhs in 1967-68 and that of vegetable oils by seventeen-fold from Rs. 13 lakhs to Rs. 220 lakhs during the same period. In the case of raw cotton, exports increased by about 25 per cent from Rs. 11.83 crores to Rs. 14.74 crores during the same period. The value of exports of tea went up by about 14 per cent from Rs. 158.4 crores to Rs. 180.2 crores and that of coffee by about 15 per cent from Rs. 15.84 crores to Rs. 18.18 crores during the corresponding period.[2]

The commodity composition of agricultural imports also reveals dominance of a single commodity, *viz.*, foodgrains. Its percentage share in the total imports during the last three years has varied from 45 to 65 per cent. Raw cotton occupies the second most important place in the imports of agricultural commodities. Other important agricultural commodities imported into India are dairy

1 The rupee was devalued by 36.5 per cent with effect from June 6, 1966.

2 In terms of post-devaluation rupee. Backgrounder: Effects of New Policies on Exports of Non-traditional and Traditional Goods, Press Information Bureau, Government of India (1968) (mimeo.).

products, eggs and honey, fruits and vegetables, vegetable oils and fats, crude rubber and wool. The total imports of these commodities were valued at Rs. 55.86 crores in 1961-62 but declined to Rs. 47.21 crores in 1965-66. Imports of agricultural machinery and fertilizers into India have increased by nearly 100 per cent from Rs. 10.38 crores in 1956-57 to Rs. 19.21 crores in 1960-61 and by 171 per cent from Rs. 17.99 crores in 1961-62 to Rs. 48.89 crores in 1965-66.[3] This is indicative of the rising tempo of development programmes in agriculture.

DIRECTION OF FOREIGN TRADE

A statistical study of India's agricultural exports made by the Directorate of Economics and Statistics, Ministry of Food and Agriculture, Government of India,[4] attempted to measure the changes in the external demand for India's agricultural exports, which included not only agricultural raw materials but manufactures with a large agricultural content like jute goods. The share of different countries in the export trade in agricultural commodities during 1950-51, 1955-56 and 1958-59 as revealed by this study is shown in Table VII.

It will be seen that two-thirds of the exports of agricultural commodities were accounted by 14 countries in 1950-51. By 1955-56, the same percentage was accounted by 11 countries and by 1958-59, by 10 countries. India's export trade is thus getting confined to fewer and fewer countries. The combined share of the United Kingdom and United States of America was 43-44 per cent of India's exports. It may be noted that between 1950-51 and 1955-56, the share of the U.S.A. has decreased and correspondingly the share of the U.K. has increased. There is of late a reverse tendency. Both these countries together with Australia accounted for nearly 50 per cent of India's exports. By 1955-56 the third place was taken by Japan and the share of Australia has declined by about 30 per cent of its original level.[5] Exports to Japan trebled during the period. The share of Commonwealth

3 Economic Survey of Indian Agriculture 1960-61, 1963-64 and 1964-65, and 1965-66, Directorate of Economics and Statistics, Ministry of Food and Agriculture, Government of India (1962, 1966 and 1967).

4 "Operational Dimensions of India's Agricultural Exports—I," K. S. Rao, *Agricultural Situation in India*, Vol. XVI, No. 10, January, 1962, p. 993.

5 K. S. Rao, *ibid.*

TABLE VII

SHARE OF DIFFERENT COUNTRIES IN INDIA'S EXPORT TRADE IN AGRICULTURAL COMMODITIES

1950-51*			1955-56*			1958-59*		
Serial No.	Country	Percentage share	Serial No.	Country	Percentage share	Serial No.	Country	Percentage share
1.	U.K.	25.0	1.	U.K.	29.0	1.	U.K.	26.8
2.	U.S.A.	18.3	2.	U.S.A.	14.7	2.	U.S.A.	16.9
3.	Australia	5.9	3.	Japan	4.0	3.	Japan	4.7
4.	Ceylon	3.0	4.	Australia	3.9	4.	U.S.S.R.	3.8
5.	Canada	2.3	5.	Ceylon	3.2	5.	Australia	3.4
6.	Burma	2.1	6.	Canada	2.5	6.	Ceylon	3.1
7.	West Germany	1.5	7.	West Germany	2.5	7.	West Germany	2.7
8.	Netherlands	1.4	8.	Burma	2.2	8.	Canada	2.3
9.	Italy	1.4	9.	Netherlands	2.2	9.	Burma	1.8
10.	Belgium	1.4	10.	Egypt	1.5	10.	Egypt	1.5
11.	Japan	1.2	11.	Italy	1.2	11.	France	1.4
12.	France	1.2	12.	Belgium	1.2	12.	Netherlands	1.3
13.	Egypt	1.1	13.	France	1.1	13.	Italy	1.0
14.	U.S.S.R.	0.7	14.	U.S.S.R.	1.0	14.	Belgium	0.9
15.	Other countries	33.3	15.	Other countries	29.8	15.	Other countries	28.4

Source: "Operational Dimensions of India's Agricultural Exports—I," K. S. Rao, *op. cit.*

* To remove the effect of variation in agricultural exports consequent on variations in the level of agricultural production, a three-year average is taken for 1949-52, 1954-57 and 1957-60 and noted against the mid-year in each case.

countries other than U.K. has tended to decline. Table VIII gives the percentage shares of importing countries in India's total agricultural exports in 1965-66. It may be noted that exports of major agricultural commodities from India were confined to countries like the U.K., the U.S.A. and the U.S.S.R. During the Third Plan period, the direction of India's export trade in certain commodities was extended to the East European countries like Poland, East Germany, Czechoslovakia and Hungary on the one hand and Canada, Japan and the United Arab Republic on the other. The share of East European countries including U.S.S.R. in India's exports rose from 8 per cent in 1960-61 to 19 per cent in 1965-66, the U.S.S.R. mainly accounting for this increase. The U.K. and the U.S.A. accounted for about 40 per cent of India's total exports in 1965-66, although the relative share between these two countries has changed to some extent during the Third Plan period.[6]

In the import trade, the commodities which account for the bulk of agricultural imports are rice, wheat, cotton and jute. The main source of supply of rice is Burma. In 1958, India imported 383 thousand tonnes of rice from Burma out of a total import of 390 thousand tonnes. By 1961, the share of Burma in the import trade had declined to 42 per cent and the share of the U.S.A. increased to 50 per cent. In 1966, India imported rice from a number of countries, namely, the U.S.A., Burma, U.A.R., Thailand, Brazil, etc., but the share of Burma in the import trade increased to about 50 per cent. Wheat is imported mainly from the U.S.A., Australia and Canada. Of the total imports of 7.78 million tonnes in 1966, the U.S.A. supplied 6.48 million tonnes (83.2 per cent) under PL 480 Agreement. In addition to this, another quantity of 51.3 thousand tonnes of wheat was imported from the U.S.A. under commercial marketing. Imports of wheat from Australia and Canada amounted to 295 thousand tonnes (3.8 per cent) and 875 thousand tonnes (11.2 per cent) respectively.

Average annual imports of raw cotton are estimated at about 6 to 7 lakh bales. The quantity of raw cotton actually imported

6 "India's Agricultural Exports and Economic Development," G. C. Bandha, *A.I.C.C. Economic Review,* Vol. 18, No. 15, February 15, 1967, p. 20.

TABLE VIII

CONCENTRATION OF AGRICULTURAL EXPORTS FROM INDIA : 1965-66

Export from	Percentage shares of importing countries in India's agricultural exports in 1965-66					
	5-10	10-20	20-30	30-35	50 and above	Total percentage coverage by the countries under column (2) to column (6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Tea	U.A.R.	U.S.S.R.	—	—	U.K.	73.3
Oilcakes	—	Poland, E. Germany Czechoslovakia and Hungary	—	U.K.	—	81.8
Cashew kernels	East Germany	—	U.S.S.R.	—	U.S.A.	84.3
Tobacco	—	Nepal	U.S.S.R.	U.K.	—	82.3
Raw cotton and waste	U.S.A.	—	—	—	Japan	77.6
Raw wool	—	U.K.	—	—	U.S.S.R.	80.6
Sugar and sugar preparations	—	Canada and Malaysia	U.K.	U.S.A.	—	90.1
Pepper	Italy	—	U.S.A.	U.S.S.R.	—	61.4
Hides and Skins	U.K.	U.S.A.	—	—	U.S.S.R.	78.7
Lac	W. Germany	U.S.S.R. U.S.A. and U.K.	—	—	—	44.3
Castor oil	—	—	—	—	U.S.S.R.	90.0

Note: This statement is based on the value of agricultural exports from India in 1965-66.

Source: Economic Survey of Indian Agriculture 1965-66, *op. cit.*, p. 141.

during 1961 was valued at Rs. 69.32 crores against Rs. 30.66 crores in 1958. Thus the level of raw cotton imports during 1961 was higher than the level of 1958 by more than 100 per cent. During the Third Plan period, the value of raw cotton imports declined by 26.2 per cent from Rs. 62.66 crores in 1961-62 to Rs. 46.21 crores in 1965-66. Imports are almost entirely from the U.S.A. under the PL 480 Agreement, U.A.R., Kenya, Sudan and Uganda. As regards raw jute, the quantity imported into India during 1961 was 4.49 lakh bales valued at 7.18 crores.[7] Imports of raw jute into the country declined to 2.90 lakh bales during 1965-66 valued at Rs. 5.60 crores.[8] The decline in the imports which was of the order of 35 per cent in 1966 over that in 1961 was mainly due to the decline in imports from Pakistan.

OBSTACLES TO AGRICULTURAL EXPORTS

Although efforts are being made to diversify production and exports, the country continues to depend for the bulk of its export earning on a few traditional export commodities. Tea alone had accounted for 16 per cent of total export receipts during the Third Five-Year Plan. Although tea, jute manufactures and cotton textiles continued to be the principal export earners, their share in total exports declined from 48 per cent in 1960-61 to 43 per cent in 1965-66. About two-thirds of India's export trade has been faced with obstacles in importing countries.[9] The imposition of quantitative restrictions, high tariffs, high revenue duties, etc., by importing countries has limited the possibilities open to India for substantially increasing its foreign exchange earnings. Though exports of commodities like gums, resins and lac, raw hides and skins, raw cotton and waste, raw wool and hair, spices, cashew nuts, etc., are, on the whole, not significantly affected by tariff and non-tariff measures, some of these products are affected by the use of substitutes. Import substitution of these commo-

7 Economic Survey of Indian Agriculture 1960-61, *op. cit.*, pp. 66-68.

8 Economic Survey of Indian Agriculture, 1965-66, *op. cit.*, p. 169.

9 Fourth Five-Year Plan—A Draft Outline, Planning Commission, Government of India (1966), p. 93. See also GATT Programme for Expansion of International Trade—Trade of Less-Developed Countries, Special Report of Committee III—Development Plans: Study of the Third Five-Year Plan of India, Contracting Parties to the General Agreement on Tariffs and Trade (1962), pp. 45-51.

dities has the effect, at any rate, of limiting the growth of the market.

Tariff and licensing policies which continue to be in force in many industrialised countries provided more favourable import treatment for raw materials than for processed goods and are a factor in retarding the development of processing industries in less developed countries like India.[10] Examples of products which suffered from this differentiation in import treatment and of export interest to India are vegetable oils, leather goods and footwear, woollen manufactures and rugs and carpets. In the case of fruit and vegetable products, tobacco, fish and fish products, many important export markets are subject to restrictions imposed in connection with the implementation of the various aims of national agricultural and fisheries policies. Moreover, such commodities as tobacco, for which State trading and monopoly procurement exist in a number of countries, are handicapped by purchasing policies which often do not take full account of commercial considerations. In these circumstances, it has been found difficult to obtain a share in some of the markets in Western Europe. Relaxation and removal of these barriers would help to expand India's several industries and would lead to the channelling of investment into directions of expanding existing industries or developing new industries with a view to securing efficient allocation of resources and the maximum expansion of trade. An improvement in the production of some of the key agricultural commodities like cereals, cotton, etc., would make a substantial contribution in relieving the strain of the adverse balance of trade which the country has been experiencing in the process of its economic development.

10 *Vide* Trade in Agricultural Commodities in the United Nations Development Decade, Vol. I: Parts I, II, III, Food and Agriculture Organization of the United Nations (1964), Part I, pp. 48-57.

CHAPTER XVII

AGRICULTURAL LABOUR AND RURAL EMPLOYMENT

In this chapter it is proposed to discuss problems of rural employment in the overall framework of the surplus population in agriculture. It is convenient to divide the subject into four parts. In the first section, the question how the surplus population emerged in the agricultural sector is discussed, with some reference to the historical experience of European countries. The problem of agricultural labourers is taken up for discussion in the second section. The various measures devised in the Five-Year Plans to relieve rural unemployment and under-employment are reviewed in section three. In the last section the concept of the surplus labour constituting savings potential has been briefly analysed.

SURPLUS POPULATION

Concept and Emergence

The problem of surplus population on the land and the consequential increase in 'rural unemployment and under-employment in India has been stressed by several competent authorities since the report of the Famine Commission of 1880. The problem has been accentuated by the faster rate at which the population has been growing in recent decades. In an earlier chapter, reference has been made to the increasing pressure of population on land since 1921.[1] During the course of the 50 years, from 1901 to 1951, the total working force increased by about 25 million from 117 to 142 million. The working force in agriculture increased by an almost identical size from 73 to 98 million, while the working force in non-agricultural occupations stood at about the same figure as at the beginning of the century. This means that the increase in the non-agricultural employment in urban areas has been off-set in almost equal degree by the decrease in such employment in

1 See Chapter II on Population.

rural areas. Thus the general trend until very recently appears to have been in the direction of increasing dependence on agriculture. Disintegration of the traditional economic basis of rural life resulted in the disappearance of certain traditional non-agricultural occupations. This fact as also the decline of the indigenous industries consequent on technological development in certain industries, also drove the people back to the land. This pressure of population both from within and without agriculture, resulted ultimately in an increasing dependence on agriculture. In the absence of any alternative means of livelihood people were forced to eke out a living, however meagre it might be, from agriculture. That is how agriculture came to shelter a large surplus of labour. A number of estimates have been made regarding the size of the surplus labour in agriculture; but the definition and the methodology adopted vary a great deal. On the whole, there appears to be an agreement on the broad conclusion that, under existing conditions, if cultivating units were to approach the size of "a family holding" offering full time employment to an average family, agricultural production could be maintained with about 65 to 75 per cent of the number of workers now engaged in it. That is to say, on certain assumptions, about one-fourth to one-third of the existing labour force in agriculture might be regarded as surplus to its requirements. The point in making this statement is merely to indicate the enormous size of the surplus labour now sheltered by agriculture and not so much to offer any precise estimate of the surplus.

European Experience

The problem of surplus population in agriculture is not peculiar to the Indian situation; in fact the problem arose at certain stages in the economic history of most European countries. During the nineteenth century, population in Europe grew rapidly and, apart from large scale emigration, means had to be found for absorbing the surplus labour in productive occupations. The problem was sought to be solved along four main lines: (1) by raising the level of production from land through intensive cultivation, (2) assisting large scale industrialisation with a view to absorbing the rural surplus, (3) land reclama-

tion and redistribution of large estates, and (4) other measures such as consolidation of holdings, spread of the co-operative movement, and encouragement to rural industries. Considerable information on this subject is available in the series of monographs prepared for the European Conference on Rural Life (1939) and published by the League of the Nations. Although India could, to some extent, draw upon this experience it must be emphasized that in several respects the conditions in India at the present stage are different from those which then prevailed in Europe. Firstly, there are very few large estates which could be distributed among the smaller farmers. Secondly, the scope for land reclamation and bringing in of fresh areas under cultivation is seriously limited. Thirdly, the problem is rendered more complex because of the rigidity of the social customs, on the one hand, and the rising expectations, on the other, associated with the spread of democratic ideas. One broad conclusion which could be drawn, however, is that efforts to increase agricultural productivity and to raise rural incomes must be synchronized with the wider programmes for increasing the tempo of development in the rest of the economy.

Changes in Occupational Structure

Before the advent of the industrial revolution, most countries had an occupational structure similar to that in India at the present time. For instance, agriculture and allied activities claimed 46 per cent of the working population in Great Britain in 1811; 63 per cent in France (1827); 42 per cent in Germany (1882); 85 per cent in Japan (1872); 81 per cent in Russia (1926). The relevant data are reproduced in Table I.

These data clearly bring out the fact that the process of industrial development altered their occupational pattern substantially. By the turn of the nineteenth century, in Great Britain, France and Germany the bulk of the labour force was shifted to the non-agricultural sector. Over a period of 40 years of rapid economic growth, the percentage of working force in agriculture declined by 23 points in Japan. A similar decline also occurred in Russia during inter-war years.

TABLE I

PERCENTAGE OF WORKING POPULATION IN DIFFERENT INDUSTRIES

	Great Britain		France		Germany		Japan		U.S.S.R.	
	1811	1901	1827	1901	1882	1907	1872	1912	1926	1939
1. Agriculture, Forestry, Fisheries, etc.	46*	9	63	33	42	29	85	62	81	58
2. Mining, Manufacturing and Building	N.A.	47	N.A.	42	39	45	5	18	6	17
3. Trade and Services	N.A.	44	N.A.	25	19	26	10	20	13	25

Source: Colin Clark: Conditions of Economic Progress (1951), Second Edition, Chapter IX

* Includes 'mining'. By 1811, industrial revolution in Great Britain had already got under way, but there is evidence to believe that the proportion of labour force in the primary sector in 1688 was not very different. (*Vide* Colin Clark: *ibid.*, p. 407).

N.A.=Not available.

In other words, in more developed economies only a small proportion of the labour force is engaged in agriculture; and yet it is able to supply a significant proportion of the food and raw materials required. It is no doubt true that some of these countries have been able to sustain this type of occupational pattern by availing themselves of the advantages of international trade which makes it possible for them to obtain the food and raw materials by selling abroad the products of their industries. It should be noted, however, that a country like the United States with hardly 12 per cent of its labour force devoted to agriculture, is able to produce food sufficient not only for its domestic requirements but also to provide a large quantity for export. The point that needs to be driven home is that if a country has to use about 70 per cent of its total population for producing the bare essentials of existence, it cannot secure, by utilising the balance of its labour force, the variety of goods

and services necessary for a high standard of living. What is necessary, therefore, is to secure a larger output from agriculture with a relatively smaller proportion of the population working on the land. Obviously, this requires a large availability of capital, improvement in tools and implements and also technological improvement involving the adoption of new methods of farming and land management.

Changes in the occupational structure necessarily take a long time to manifest themselves. Naturally, therefore, it will take several decades for the occupational pattern in India to become more balanced. The present occupational distribution of the labour force can be seen from the data presented in Table II.

TABLE II

CLASSIFICATION OF WORKERS, 1962—ALL-INDIA

Classes of workers	Total workers (in million)	Percentage to total
(1)	(2)	(3)
Cultivators	99.5	52.8
Agricultural Labourers	31.5	16.7
Livestock, Forestry, Fishing, Hunting and Plantations, Orchards and Allied Activities	4.3	2.3
Total Agricultural Classes	135.3	71.8
Mining and Quarrying	0.9	0.5
Household Industry	12.0	6.4
Manufacturing other than Household Industry	8.0	4.2
Construction	2.1	1.1
Trade and Commerce	7.6	4.0
Transport, Storage and Communications	3.0	1.6
In Other Services	19.5	10.4
Total Workers	188.4	100.0

Source: Census of India, Paper No. 1 of 1962, 1961 Census—Final Population Totals, Government of India (1962).

It is quite clear that over 70 per cent of the labour force continues to be employed in agriculture despite a decade of planned

industrial development. Since a very high proportion of the population is dependent on agriculture it is not easy to expand the non-agricultural sector fast enough to cope up with the increases in population and also to reduce existing surplus labour in agriculture. Some idea of the dimensions of the efforts needed to reduce the proportion of labour engaged in agriculture could be had from the following one or two examples. The distribution of labour force between the agricultural sector and the non-agricultural sector at present is 70:30. The rate of increase in the labour force may be assumed to be about 1.5 per cent per annum. If the aim is to prevent any increase in the absolute numbers subsisting on agriculture, non-agricultural employment would have to expand at the rate of about 5 per cent per annum (1.5 × 100/30). Obviously, this is a very fast rate and perhaps may not be achieved at least in the short run. Thus it is not unlikely that a large proportion of the new entrants to the labour force may have to be accommodated in agriculture itself.

To bring out the long-term implications, another example may be given. According to the population projections the total population in 1976 is expected to be 625 million. Assuming that the aim is to have a more balanced industrial distribution of the working force in India (with 60 per cent of the workers engaged in the agricultural sector, about 20 per cent working in industries and mining and some 20 per cent in the tertiary sector) and that the proportion of the working force to the total population in 1976 will remain the same as in 1961 (0.43), workers in agriculture will number 161.25 million and those in the other two sectors 53.75 million each. That would require the creation of nearly 50 million additional jobs in the non-agricultural sector over the next 15 years or nearly 3.3 million per year. Within the non-agricultural sector, employment in industries and mining would need to expand at a much faster rate (nearly 2.2 million jobs per year) than that in the tertiary sector (nearly 1.4 million jobs per year).

The magnitude of the task involved in bringing about the more balanced employment pattern visualized above becomes clear when it is recalled that during the entire Second Plan

period, it was possible to create about 6.5 million employment opportunities outside agriculture and in the Third Plan the corresponding figure was 10.5 million or fractionally higher than 2 million per year. These calculations are meant to be only illustrative but they do bring out quite clearly how large the expansion of employment opportunities in sectors other than agriculture has to be in order that the surplus manpower on the land is siphoned off.

AGRICULTURAL LABOUR

One direct result of this relentless pressure of population on land was the emergence in the rural society of a section of population which came to be dependent entirely on wage-paid labour as a means of livelihood.

Historical Background

There was no distinct class of agricultural labour before the 19th century as the traditional agrarian society was founded on an integrated unity of agriculture and handicrafts. The exchange operations of the agricultural producers and the consumers in the rural areas who constituted all the non-agricultural class occupied in industrial pursuits were regulated by certain conventions.[2] Sir George Campbell referred to the fact that "as a rule, farming is not carried on by hired labour."[3] R. Palme Dutt observed that "in 1842 Sir Thomas Munroe as Census Commissioner reported that there were no landless peasants in India" (an undoubtedly incorrect picture but indicating that the numbers were not considered to require statistical measurement).[4] The absence of a large class of agricultural labourers up to the end of 19th century is also revealed by certain regional studies of India. The Punjab Census of 1868 noticed that agricultural labourers and all herdsmen numbered only 231,500 or less than

2 Unfortunately, there is no precise information on the extent of agricultural labour hired for the purposes of farming. In the present economy, the class of agricultural labourers derived its main livelihood from wages, either in kind or cash working on the lands of others. From a study of the economic conditions in pre-British India, it can be safely concluded that agricultural labourers did not constitute an element of the agrarian society.

3 Sir George Campbell: Modern India (1852), p. 65.

4 R. Palme Dutt: India Today (1949), p. 224.

3 per cent of a total agricultural population of about 9,256,000.[5] The study of Faridpur district of East Bengal undertaken by J. C. Jack in the first decade of the 20th century also confirmed the same fact. He observed that "it is probable that among all those cultivators there were none who were exclusively agricultural labourers, that is to say, labourers in the English sense of the term. The landless labourer so common in England is unknown in Faridpur and very rare anywhere in Eastern Punjab."[6] Similarly, "the existence of a large landless proletariat with no security of tenure as tenants or as farm labourers on others' land was not a big problem in the past in South India."[7] The report of the Census for Madras showed that in 1871, 13 per cent of the male population was enumerated as labourers and probably more than three-fourth of these found employment in connection with land.[8] There is no reference in any of the authoritative writings on Indian village communities up to the middle of 19th century to agricultural labour as constituting the sole occupation for any sizable group of the population.[9] From these early accounts, it is clear that the problem of agricultural labour was a phenomenon of the period of the British rule in India.

With an increase of population, the growing pressure on the available cultivable land resources combined with the growing indebtedness of the agricultural classes due to the facility of transfers in land provided by the agrarian reforms, the emergence of a class of landless labourers was clearly noticed. There was a speedy growth in this "floating" population from 18.7 million in 1891 to 33 million in 1931. Between 1911 and 1931, the number of labourers per one thousand cultivators rose from 247 to 519

5 Census of Punjab, 1868, Table No. 4.

6 J. C. Jack: The Economic Life of the Bengal Districts (1916), p. 84.

7 P. J. Thomas and K. C. Ramakrishnan: Some South Indian Villages —A Resurvey (1940), p. 347.

8 Census of Madras, 1871, p. 117.

9 *Vide* Radhakumud Mukerji: Local Government in Ancient India, also the History of Village Communities in Western India, Bombay University Economic Series No. 4, and John Mathai: Village Communities in India.

in the country.[10] In any case, the change in ratio is somewhat remarkable, even when adopting the lowest ratio which can be compared with that of 1911. Possibly the explanation is that a large increase has taken place in the agricultural population without a corresponding increase in actual holders of land whether as tenants or owners though it is likely that a concentration of land in the hands of non-cultivating owners was also taking place.[11] The proportion was even higher as it varied with the size of the displaced population from the traditional occupations. Between 1941 and 1951, the proportion varied from 519 to 225.

The broad conclusion is, therefore, quite clear. Even as late as the closing decades of the 19th century when this class of agricultural labourers had just started to grow, it formed hardly 10 per cent of the total rural population. In the 50 years that followed the process of its growth was accentuated so rapidly that by 1951 agricultural labourers formed more than 30 per cent of the total rural population. The process of transformation of the rural class structure implicit in this situation can be visualized somewhat as follows: the peasant proprietor with a sizable holding has been shrinking to the position of a petty cultivator owning a small holding. His holding is gradually declining further, bringing him down the ladder as a tenant, a share-cropper, an agricultural labourer with a small fragment of land and finally, the landless labourer.

Agricultural Labour Enquiry: 1950-51[12] and 1956-57

On account of the seriousness of the problem arising out of a striking increase in the agricultural labour population, the economic conditions of this section of the population came in for a specific enquiry by the Government. The Agricultural Labour Enquiry conducted during the year 1950-51 enumerated nearly 17.6 million families out of a total number of 58 million rural families as agricultural labourers. Thus, about 30 per cent of

10 The Census reports for 1911 and 1931 give the proportion as 254 and 407 respectively. The disparity might be due to an error in calculation.

11 Census of India, 1931, Vol. I, Part 1—Report, p. 288.

12 For a brief summary of results of the first enquiry see Agricultural Labour—How They Work and Live, B. Ramamurthy, Government of India (1954).

all rural families were agricultural labourers; while half of these were without land, the other half were in possession of some land. Again, 90 per cent of agricultural labourers were casual and 10 per cent attached.

The size of the problem of agricultural labour varies from region to region, depending upon such factors as pressure of population, availability of land for cultivation, differences in the extent of irrigation and double cropping, fertility of land, cropping patterns and opportunities available for seasonal migration. The broad features of the distribution of agricultural labour are discernible from the results of the enquiry. The proportion of the agricultural labour was highest in South India being 50 per cent and lowest in North-West India, being 10 per cent of the total number of rural families. However, the percentage was quite low in the North being 14 and relatively high in Eastern and Central Zones, with 33 and 37 respectively. Of the total number of 17.6 million labour families, the largest number, *i.e.*, 6.2 million was located in the Southern Zone of which 5 million were in the State of Madras alone. East India ranked next with 5 million families of which 50 per cent were concentrated in Bihar. In the Central Zone there were nearly 3 million families and in the North and West India between one and two million. These figures are indicative of not only the magnitude of the problem in the different regions but also the factors which have intensified the problem in certain areas.

The Second Agricultural Labour Enquiry[13] was conducted in 1956-57 with a view to obtaining a comparative picture of the conditions of agricultural labourers in the country as between 1950-51 and 1956-57. It was hoped that such an investigation would bring out the impact of the First Five-Year Plan on the economic conditions of agricultural labour. Because of the improvements introduced in the concepts, definitions and measurements, however, the results of the two enquiries are not strictly comparable. Hence, we give below only the important results of the second enquiry. Out of 66 million rural families in 1956-57, the number of agricultural labour families was esti-

13 Report on the Second Agricultural Labour Enquiry, 1956-57, Vol. I —All-India, Government of India (1960).

mated at 16.3 million. Fifty-seven per cent of agricultural labour families were without any land. About 73 per cent of agricultural labourers were casual and 27 per cent were attached. The regional distribution of agricultural labour families reveals that the percentage of agricultural labour was the lowest in North India, being 7.5 per cent and highest in South India, being about 34 per cent of the total number of rural families. Of the total number of 16.3 million agricultural labour families, 5.2 million were located in Eastern Zone of which one-half were in Bihar. The Southern Zone ranked next with 4.5 million labour families of which 2.1 million were in Madras. Out of 3.3. million labour families in the Central Zone, 2 million were concentrated in Uttar Pradesh. The Northern and Western Zones accounted for 0.5 million and 2.8 million respectively.

The quantum of average agricultural employment available to casual adult male agricultural labourers during 1956-57 was 197 days. Attached workers had naturally more employment with some continuity. They were employed for 281 days. Both the categories had, in addition, some non-agricultural employment, the former for 40 days and the latter for 16 days. Wage employment for adult woman labourers was available for 141 days. Women were mostly engaged in casual jobs. Child labour has also been utilised in certain regions when seasonal conditions create a pressure on the supply of labour available. On an average, child labour was employed for 187 days in a year. The share of casual child labour in the total casual wage employment in agricultural operations came to 5-8 per cent.

The average daily wage of the adult male casual labourer in agriculture was Re. 0.96 and that of female labourer was Re. 0.59. It may be noted that about 81 per cent of the total income of agricultural labour families was derived from paid employment. As regards modes of wage payment, about 49 per cent of man-days worked by casual workers were paid in cash, 40 per cent in kind and the remainder partly in cash and partly in kind. The average annual income of an agricultural labour family, calculated on the basis of wholesale prices, was Rs. 437. The main source of family income in agriculture was wage-paid employment which accounted for 73 per cent of the total annual

income, while income from cultivation of land, from non-agricultural labour and from other occupations accounted for 6.9 per cent, 8.0 per cent and 12.1 per cent respectively. The average annual consumption expenditure of an agricultural labour family was Rs. 617. It was considerably higher than the income, the deficit being Rs. 180. This situation existed in all the States. Of this deficit, 90 per cent was met out of the sale of real assets, transfer receipts and past savings. The distribution of consumption expenditure reveals that 77.3 per cent were spent on food, 6 per cent on clothing and footwear, 7.9 per cent on fuel and lighting and 8.8 per cent on services and miscellaneous items. About 64 per cent of agricultural labour families were indebted, the average debt per family per annum being Rs. 88. The total volume of debt of all agricultural labour households was Rs. 143 crores. The percentage of debt incurred for consumption purposes was 46.4 while the percentage of borrowings for production and social expenditure was 18.8 and 23.9 respectively. Of the average debt of Rs. 138 per indebted family, 45.6 per cent was advanced by co-operative societies and others, 34.1 per cent by moneylenders, 15.2 per cent by employers and 5.1 per cent by shopkeepers.

Conclusion

What these two enquiries did bring out unmistakably is the enormous size of the problem. Agricultural labour constitutes the lowest rung of the agricultural ladder; there is widespread unemployment and under-employment; the standard of living of this class is the lowest in the country. This most disadvantaged section of the rural society is, therefore, in need of protection and assistance. It is feared that the process of general economic development may by-pass this section. For instance, even though with the development of agriculture and irrigation there has been an increase in production and in the availability of total volume of work, this has to be shared by very large numbers. The section of the rural population which is landless or which has only small fragments of land has benefited much less than the others; in some areas their conditions may have actually worsened. It has, therefore, been realised that the programmes for the development of the rural economy which are undertaken in the inte-

rest of the rural population, as a whole, must be supplemented in several directions by special measures for assisting agricultural labourers. Some of these measures may be mentioned at this stage. Attempts to apply the Minimum Wages Act, 1948 to the agricultural sector were made in some States during the period of the First Plan. Experience has, however, shown that the levels of agricultural wages are bound up to a considerable extent with the levels of agricultural productivity; nor would it be feasible to enforce higher wages in a situation of abundant supply of labour. In reality, therefore, the application of minimum wages might be useful only in excessively low wage pockets. An investment of about Rs. 200 crores provided for the development of village and small industries in the Second Plan was meant primarily to benefit the weaker sections of the rural population like agricultural labourers and artisans. Further, lands obtained through the application of ceilings and those donated in *Bhoodan* and *Gramdan* programmes were also intended to be utilised for the settlement of agricultural labourers. Of the total area of 4.4 million acres donated as *Bhoodan*, about 8.3 lakh acres have been distributed so far. A number of State Governments also took steps to provide house sites free or on a subsidised basis to landless agricultural labourers and protected them from forced ejectment.

From the experience of a decade of planned development, it is clear that while special schemes in the interest of agricultural labourers are useful up to a point, they can only touch the fringe of the problem. In the ultimate analysis the problem of agricultural labourers is a part of the wider problem of unemployment and under-employment in the rural areas. Ultimately, therefore, the landless sections of the population can be substantially rehabilitated only by achieving rapid and intensive development in rural areas as part of the broader process of economic development for the country as a whole. The more general efforts at enlarging the number of employment opportunities in rural areas are referred to in the next section. We may end this section by making reference to the most significant development in the Third Plan, namely, the launching upon of works projects in rural areas; these programmes which are specially designed to benefit largely agricultural labourers are dis-

cussed in detail in the last section. Under this programme it was hoped to provide additional wage employment in rural areas for 100 days in the year, specially during the slack season, to about 2.5 million persons by the last year of the Plan.

EMPLOYMENT AND DEVELOPMENT PLANNING

Approach to the Problem

The existence of vast reserves of unutilised or under-utilised manpower has a direct relevance to the broad strategy of development planning. There is in the first place the need to make the maximum use of idle labour for the purpose of development. Here it is a question not so much of providing employment at existing or higher wages but rather one of effectively mobilising the favourable manpower resources at minimum social costs. Secondly, there is the problem of increasing the productivity of labour so that employment can be provided at rising levels of wages or incomes.

This aspect of the problem was recognised in the First Plan which emphasized that the two problems in fact are inter-dependent. Utilisation of idle manpower for building up of productive assets without impairing the stability of economy requires, as a pre-condition, an increase in the productivity of labour and availability of larger supplies of essential consumer goods like foodgrains on which the bulk of the increase in money incomes is likely to be spent. The Plan also took the view that unemployment was not merely an economic problem but also a social problem involving human values. It was therefore suggested that the following criteria should be taken into account in framing the employment policy for development: (*a*) maximum use of unemployed manpower for development purposes; (*b*) a restraint, in the initial stages, on the increase in money incomes; (*c*) raising the level of investment and technical efficiency so as to improve labour productivity; (*d*) guarding against technological unemployment in the early stages of industrialisation; and (*e*) balancing the allocation of investment among new activities, keeping in view the need to increase employment opportunities in the short run as well as the larger pattern of development necessary for an expanding economy.

In accordance with these criteria the Plan emphasized the development of small-scale and village industries with a view to absorbing a large proportion of the increase in working population. It was also envisaged that within the sphere of agriculture itself, programmes of irrigation, land reclamation, afforestation, soil conservation, extension of mixed farming and the like would provide increased employment or reduce under-employment. Over a long period the expansion of tertiary sector was expected to absorb a considerable part of the additions to the working force. To quote: "In the immediate future......attention has to be concentrated primarily on diverting the increases in working population to large and small-scale industries and the supporting services rather than on changing in any drastic way the overall occupational pattern. The change in occupational pattern will, no doubt, follow—perhaps faster than can be foreseen now—but this is not an end in itself and should be regarded more as a corollary of development rather than as a direct objective."[14]

This basic approach was also followed in the Second Plan which, however, adopted a somewhat more positive attitude towards changes in the occupational structure. We can do no better than quote the relevant portion from the Plan. "The objective of policy from the long-term point of view should clearly be to keep to the minimum further increases in the working force in agriculture. In fact, after a period, there should be a fall even in absolute numbers on the land."[15] It was however fully realised that even with the best of efforts some increases in the working force in agriculture would be inevitable, at least for some years to come. The utmost that one could therefore aim would be to reduce the proportion of the agricultural labour force to the total, to about 60 per cent by 1975-76.

Employment Position in the Second Plan

The progress of the various programmes of development in the fields of agriculture and rural industries during the first two Plans has been reviewed elsewhere. The extent to which these

14 First Five-Year Plan, Planning Commission, Government of India (1953), pp. 25-26.

15 Second Five-Year Plan, Planning Commission, Government of India (1956), p. 14.

programmes have created additional employment opportunities cannot be measured with any degree of precision. According to the estimates of the Planning Commission, at the beginning of the Second Plan there was a back-log of unemployment of 2.5 million persons in urban areas and 2.8 million persons in rural areas. The Second Plan envisaged an addition of 10 million to the labour force—about 3.8 million in urban areas and 6.2 million in rural areas. The programmes of development in the Second Plan were expected to provide employment outside the agricultural sector to 8 million persons; with the increase in agricultural production it was expected that there would be some reduction in unemployment in the agricultural sector itself. Altogether the Plan envisaged a sufficient increase in the demand for labour to match the increase in the labour force amounting to 10 million. The actual outcome however was less than these initial expectations. Additional employment opportunities outside the agricultural sector generated during the Second Plan may be of the order of 6.5 million. Thus the "back-log" of unemployment increased over the period of the Plan. It should be pointed out however that one could not identify and locate this "back-log." It would be misleading to infer that a certain proportion of the rural labour force remained totally unemployed and that the number of such persons is on the increase. In an underdeveloped economy it is not easy to measure precisely unemployment or under-employment. There is a tendency, specially among the self-employed to share work between members of the family or the group. Thus, in such a situation unemployment takes the form of under-employment which is turn is reflected in the very low levels of incomes. In other words, the available quantum of total work gets distributed among a larger labour force, to the detriment both of those who are employed at present as well as the new entrants to the labour force. The concept of the "back-log" therefore in effect means that the rate of growth of per capita incomes in agriculture is kept down by the pressure of the surplus population which could not be absorbed anywhere else.

The Third and Fourth Plans

The experience of the two Plans in the matter of providing employment opportunities in and outside agriculture shows that

despite a significant increase in the level of investment in the economy and a rise in industrial and agricultural production, the problem of unemployment has hardly become less acute. Over the Third Plan period, the labour force increased by 17 million and the additional employment created is estimated at about 14.5 million, 10.5 million being in the non-agricultural sector and 4 million in the agricultural sector. Taking into account the back-log of unemployment of about 7 million at the end of the Second Plan, it seems that the back-log would be about 9 to 10 million as on April, 1966, of whom about three-fourths are in the rural areas. Further, as against a 23 million of net addition to labour force during the period 1966-71, the estimated increase in employment opportunities may be of the order of 19 million—14 million in the non-agricultural sector and about 4.5 to 5 million in the agricultural sector.[16] Thus, even if employment opportunities are created for about 19 million persons, (leaving aside the back-log of unemployment of 9 to 10 million), there would remain the need to find additional jobs for 4 million persons to provide work to the new entrants to the labour force. Some of the new entrants have, therefore, to be accommodated in agriculture itself.

Intensive Agriculture

It is difficult to estimate the employment potential of the vast range of projects and programmes which form part of a plan of development spreading over a five-year period. A broad idea of the employment implications of some programmes relating to rural areas may be however outlined. One may begin with agriculture itself. It has been proposed to increase agricultural production by about 31 per cent during 1966-71. This will involve adoption of improved techniques, use of better seeds, greater use of fertilizers, measures for soil conservation and above all extension of irrigation. All these will mean an additional quantum of work on the land; contour-bunding, digging of field channels and the like will provide temporary employment in construction, whereas improvement in techniques of ploughing, adoption of the Japanese method of paddy cultivation and, in general, intensive farming

16 Fourth Five-Year Plan—A Draft Outline, Planning Commission, Government of India (1966), pp. 106-108.

would involve a continuing or permanent increase in the quantum of work. No doubt, a part of this increase in demand for labour complementary to the various imputs in agriculture may mean a reduction in under-employment of the existing labour force; but a part of the demand may also mean creation of additional employment opportunities for the new entrants. How exactly the total demand will be apportioned between the two would depend upon a number of factors such as the size of holdings, the extent of hired labour in farming and other organisational changes. The point to be noted is that measures for increasing agricultural production would mean, to some extent, provision of additional employment and also increasing productivity and incomes per head.

Village and Small Industries

Development of agriculture, however, can provide an admittedly limited scope for larger employment. In the long run, the solution to rural unemployment and under-employment has to be found in the diversification of the rural economy, improvement in the production techniques of existing rural industries, and encouragement of new village and small-scale industries. The objectives of the programmes for village and small-scale industries were clearly set out in the Industrial Policy Resolution, 1956; these are to (i) create immediate and permanent employment on a large scale at relatively smaller capital costs, (ii) meet a substantial part of the increased demand for consumer goods, (iii) facilitate fuller mobilisation of local resources of capital and skill, and (iv) integrate these industries with the rural economy on the one hand and large scale industry on the other. These objectives indicate that the role of these industries has been envisaged more as complementary to rather than competitive with the large scale industries sector. However, the question of the choice of techniques, namely, whether a more labour-intensive or capital-intensive technique should be chosen, does arise in a limited number of cases. It is very difficult to lay down a general rule for arriving at a correct choice. All that one can say is that a balanced view of the conflicting considerations of larger employment and greater efficiency has to be taken.

Improvement in the production techniques and organisation of the existing rural industries is, therefore, an important plank

of the programme. The establishment during the First Plan of All-India Boards to advise and assist development programmes for the Handloom Industry, Khadi and Village Industries, Small-scale Industries, Handicrafts, Sericulture and Coir, was a major step towards providing a regular organisational base. Assistance in a variety of ways like credit, training facilities, technical advice, supply of improved tools and equipment and marketing is being provided. In the Third Plan an outlay of Rs. 264 crores was provided for programmes of these industries; as a result of these programmes it is estimated that part-time and fuller employment was provided for about 8 million persons and additional whole-time employment for about 6.3 lakh persons.[17] A total outlay of Rs. 370 crores in the public sector has been suggested in the defunct Draft Outline of the Fourth Plan. On the basis of the total investment envisaged, including investment from private sources, it is estimated that these programmes will provide part-time employment or fuller employment for about 11 million persons and whole-time employment for about 1.6 million persons.[18] Ultimately, with improvements in techniques these industries offer a promise of growing into an efficient and progressive decentralised sector of the economy.

Industrial Estates

There seems to be considerable scope for the expansion of the small-scale industries in fields where the question of the choice of techniques does not really present itself. In order to make the small industries viable, however, some assistance by the State becomes necessary, in the initial stages at least. Industrial estates which provide accommodation, power, transport arrangements for the smooth flow of raw materials and similar other facilities have proved to be quite helpful for the promotion of small industries. During the Second Plan period, 119 schemes for industrial estates were sanctioned of which about 66 were completed and remaining 53 were carried over to the Third Plan. During the Third Plan, 283 new industrial estates were completed; and in 1966-67, the number of industrial estates completed increased to 336 of

17 The employment estimates also take into account investment from private sources.

18 Fourth Five-Year Plan—A Draft Outline, *op. cit.*, pp. 238, 242 and 248.

which 231 have started functioning.[19] One advantage of the industrial estates is that if they are located away from the larger urban centres, they would help to discourage the migration of population to such centres which are already congested and overcrowded. The scope for expanding such industrial estates to rural areas, however, has also its limitation. One of the primary requisites for the success of the industrial estates is availability of adequate power. No doubt, the rural electrification schemes, as and when they materialise, will be of help in this context. But the cost of such schemes is so prohibitive as to prevent any rapid advancement in the direction of the electrification of all the villages. The average cost of providing distribution lines and substation equipments would be about Rs. 60,000 to Rs. 70,000 per village; if all the villages of the country were to be electrified, therefore, the capital outlay involved for distribution lines alone would exceed Rs. 3,000 crores.[20] The operation and the maintenance costs also tend to be rather high because of the low load factor. In the immediate future, therefore, the best course seems to be the construction of industrial estates in small towns where electrification is relatively not so expensive and in towns which could attract labour from rural areas.

Rural Industries Planning Committee

Here, it is necessary to make reference to an important programme, initiated during the Third Plan, which, when effectively implemented, will go a long way in expanding employment opportunities in rural areas. A high level Rural Industries Planning Committee has been constituted to review the progress of industries in rural areas and recommend programmes for their intensive development. In pursuance of the Committee's recommendations, 49 rural industries projects have been taken up in certain selected rural areas in different States. Each project area covers generally a population of 3 to 5 lakhs and consists of 3 to 5 complete development blocks. The object of these programmes is to promote industries, which are based on agriculture and other local resources with a view to broadening and diversifying the base of the rural

19 Annual Plan Progress Report 1966-67, Planning Commission, Government of India (1968), p. 74.

20 Second Five-Year Plan *op. cit.*, p. 340.

economy. The size and content of the future programme of these projects in the Fourth Plan will be decided in the light of the findings of a Study Team which has been set up to evaluate the progress of these projects.

Mobility of Labour and Regional Development

The problem of unemployment is rendered more acute by the various social and economic barriers to the mobility of labour between different regions. As we have seen earlier, surplus labour seems to be concentrated in certain specific areas. There are obvious difficulties in large scale transfers of population from one area to another and from the rural to the urban areas. One solution to this problem is that an attempt should be made to take the work to the people rather than taking people to wherever the work is available. In point of fact both these processes are necessary. The development of small industries, rural electrification and establishment of industrial estates — all these aim at bringing work to the people. This is also one of the considerations underlying the idea that the various development projects ought to be located in different parts of the country so that the benefits therefrom would be spread over as large an area as possible. The location of industries is governed by a number of factors, the more important of which are availability of raw materials and power, facilities of transport and nearness to the consuming centres. From a strictly economic point of view one would choose the location that is most economical in terms of cost. In a planned economy, however, this cannot be the sole criterion of deciding the location of industries. Development of relatively backward or depressed regions has to be given a certain priority; and from this point of view dispersal of both large and small industries is justified. The idea of regional development, however, has also its own limitations. The development of the country has to be viewed as a whole; if regional considerations are given too much weight in the initial stages of development, there is the danger of wasteful use of scarce resources resulting in a retardation of the growth of the economy. These considerations suggest that perhaps, simultaneously with the development of non-agricultural avenues of employment in rural areas, it is also necessary to adopt measures that promote inter-regional or geographical mobility of labour.

In the last analysis, the problem of rural unemployment and under-employment is the problem of the under-development of the economy itself. It is only when the basic economic and social overheads such as power, transport and communications as also education and training in skills are provided that one could expect a substantial growth of small industries, trades and occupations, linking the organised sector of the economy with the vast diffused sector of agriculture. Obviously, these are relatively longer term solutions. They pose a challenge to the planners, a challenge which has to be met, *inter alia,* by a progressive stepping up in the rate of investment in the economy. In the immediate future, however, it is contended that the existence of surplus manpower itself can be regarded as a savings potential and could be made use of in stepping up the investment in the economy. This is the proposition which is examined in the next section.

SURPLUS LABOUR AS POTENTIAL SAVINGS

It is contended that an under-developed economy like India has a certain advantage in that it has large reserves of unutilised or under-utilised manpower by utilising which it is possible to step up capital formation. The argument can be explained briefly as follows. At present the surplus labourers on land are being maintained by the family, even though they contribute little or nothing to output. Now, suppose, these unproductive labourers are drawn from the land and are employed on, say, a construction project. There is already provision for the food which they were consuming in the previous situation. Hence by setting these persons to productive work, it would be possible to add to the capital assets of the community. It is in this sense that surplus labour constitutes potential savings. Of course, this is only a bald statement of the proposition put forth by Prof. Nurkse.[21] There are one or two limitations, by which the above statement has to be qualified. In the first place, consequent on the employment of the erstwhile under-employed, there is likely to be some increase in the demand for consumer goods particularly, foodgrains. Secondly, if a large number of construction works are to be taken up, naturally, the demand for complementary factors like building

21 Ragnar Nurkse: Problems of Capital Formation in Under-developed Countries (1953); see particularly Chapter 2, Population and Capital Supply.

materials, tools and equipment, and skilled personnel would also go up. The harnessing of the savings potential concealed in the surplus labour is, therefore, contingent upon fulfilment of these two conditions. If the additional foodgrains and the complementary factors required are found, it should be possible to step up the level of investment by an amount larger than the value of these additional materials, the difference representing the net value of the labour of surplus manpower.

The thesis advanced by Nurkse contains a basic fact that capital formation is, in the last analysis, stored-up labour. To the extent there is idle labour, therefore, there is a potential available for increasing the rate of investment. While conceptually the proposition thus seems to be valid there are several limitations to the practical application of the idea to programmes of planning. Firstly, the additional employment created for the surplus labour would generate additional incomes, a major part of which would be spent on foodgrains. Hence, the rate at which such additional employment could be created becomes itself a function of the rate at which the productivity of the agricultural sector could be raised. We, therefore, go back to what we have stated earlier, namely, that the increase in agricultural production is a pre-condition for stepping up the rate of investment. Secondly, the problem of segregating the surplus labour is also tied up with the institutional considerations. For instance, at the sectoral level, where the surplus of labour undoubtedly exists in the sense that the aggregate output can be maintained with a much smaller labour force, this surplus labour is not totally unemployed and, therefore, it cannot be easily withdrawn from the sector for employment on construction projects. In fact, if the present techniques and organisation of agriculture persist, there will not be any surplus labour which could be released for productive work elsewhere. In this sense the surplus labour also is merely potential; and the surplus has to be set free by improving the organisation of agriculture which may include rational redistribution of land, reform of the land system and the management of farms. This proposition also holds true at the farm level. The under-employed farmer is tied to the holding in the sense that he is not wholly free to accept employment elsewhere. Moreover, he may not be willing to accept wage employment without sufficient inducement. In effect, this means

that although he may be living at the bare subsistence level, he may have to be offered a wage rate which is much higher for inducing him to accept the employment.

A more feasible aspect of the problem is making use of the idle labour during what is called the off-season or the slack season of the year. Here, of course, the question is one of selecting such projects as could be conveniently put through during the off-seasons in different areas.

Utilisation of Rural Manpower

There is a wide range of local works which could be undertaken with the help mainly of labour and with small doses of capital. The type of projects which are suitable for utilising under-employed labour for development purposes are: (1) irrigation and flood control projects, land reclamation schemes including water-logging and drainage and reclamation of saline lands, afforestation and soil conservation schemes, construction of roads; (2) construction and maintenance of bunds and field channels for irrigation works, contour-bunding and terracing; (3) land levelling, surface drainage; (4) construction and repair of wells and tanks, school building, etc.; (5) work connected with dry farming; (6) construction of approach roads linking the villages with the market centres and (7) consolidation of holdings.[22] The list is exhaustive enough to indicate that such projects could be diffused all over the rural areas and also so framed as to meet the local needs of surplus labour. If these projects are to provide employment on a substantial scale it is necessary to select the projects properly, make provisions of complementary investment in the plans of the States and districts and entrust the village level organisation with the task of implementing them.

It is also important to emphasize the role of local initiative and leadership in organising such projects. Community efforts towards capital formation can be of considerable value. The villagers, for example, can build their own roads, schools or wells, common pastures; they can also undertake afforestation or soil conservation on their own initiative. Such works of local interest

22 Facets of Planning, Publications Division, Ministry of Information and Broadcasting, Government of India (1960), pp. 27-40.

can be organised by community leaders with the financial help from Government. "This work is valuable not only because it creates capital without reducing consumption, but also because it is the means of awakening the interest of what are sometimes rather stagnant communities."[23] In areas where the incidence of unemployment or under-employment is particularly high, special work projects could be organised by local authorities or State Governments. Community effort could also enlist the co-operation of villagers in dealing with natural calamities like floods, water-logging, drainage, etc. In a developing economy any democratic means of arousing the enthusiasm among the people and of stimulating them to desire further improvement needs to be strongly supported. In this context the village co-operatives, the village panchayats or even schools can play an important role in the mobilisation of rural manpower.

Progress in the First and Second Plans

Admittedly, no specific efforts were made on any significant scale towards giving such programme a more concrete shape during the First and Second Plans. Attempts to secure voluntary contribution of labour or *shramadan* for building up community assets in the community development areas were of course a step in this direction. Some idea of the progress made in this respect could be had from the studies conducted by the Programme Evaluation Organisation. Nearly 73 per cent of the 399 villages studied by the Programme Evaluation Organisation reported *shramadan*.[24] No separate estimates of the value of the people's contribution in terms of labour are available. However, the value of contribution in terms of cash, kind and labour amounted to about Rs. 25 crores during the First Plan and to Rs. 77 crores during the Second Plan.[25]

23 Measures for the Economic Development of Underdeveloped Countries, United Nations (1951), p. 40.

24 The Fifth Evaluation Report on the Working of the Community Development and N.E.S. Blocks, Programme Evaluation Organisation, Planning Commission (1958), pp. 171-172.

25 Report of the Ministry of Community Development and Co-operation, 1962-63, Government of India (1963), p. 37.

Rural Works Programme

It is only in the Third Plan that the programme for utilisation of rural manpower, formulated broadly on the lines discussed above, attained a more positive content. It is reiterated that the rural works programme, launched upon during the Third Plan, is significant not merely for creating the additional employment opportunities, but even more as an important means for harnessing the large manpower resources available in rural areas for rapid economic development. The main aim of these projects has been to provide employment, which would go on increasing from 1 lakh in the first year to about 2 to 5 million in the last year of the Third Plan, on supplementary productive works, particularly in areas with heavy incidence of unemployment and under-employment. The programme was initiated in 1960-61 with 32 pilot projects. Between 2 and 3 projects were allotted to each State and one to the Union Territory of Himachal Pradesh. These projects included schemes for irrigation, afforestation, soil conservation, drainage, land reclamation and improvement of communications. On the basis of the experience of these projects the programme was to be extended to other areas on a mass scale. Although an outlay of Rs. 150 crores was indicated for the programme was to be extended to other areas on a mass scale. taken turned out to be very small; this may be partly due to limitations of financial resources and partly due to organisational problems.[26] In all, only about Rs. 19 crores were made available to the programme. During the last year of the Third Plan, expenditure on the programme stood at about Rs. 8 crores and employment provided was of the order of 40,000 in terms of work for 100 days in a year.[27] The total expenditure on the programme during the Third Plan was Rs. 19.33 crores, resulting in generation of employment to the tune of 82.4 million man-days.[28]

26. The Programme Evaluation Organisation which evaluated the working of the first series of these projects has drawn attention to the deficiencies in implementation of the programme. See Case Studies of Pilot Projects (Series I) for the Utilisation of Manpower, Programme Evaluation Organisation, Planning Commission, Government of India (1962).

27 Fourth Five-Year Plan—A Draft Outline, *op. cit.*, p. 111.

28 Report 1966-67, Ministry of Food, Agriculture, Community Development and Co-operation (Department of Community Development), Government of India (1967), p. 14.

Recognising the importance of the programme, it has been incorporated as an integral part of the Fourth Plan. A provision of Rs. 95 crores has been made for the programme and the possibility of enlarging the size of the outlay has not been ruled out. In 1966-67, the expenditure incurred and employment generated under the programme are estimated at Rs. 7.50 crores and 30 million man-days respectively.[29] Given adequate organisation at the technical and administrative level, it should be possible to make a success of the programme.

Summing Up

The agricultural sector in India now shelters a large surplus labour which is historically a result of relentless pressure of population on the land. In such a situation a permanent shifting of the redundant labour to the non-agricultural sector can be envisaged only as a long-term solution. Absorption of the surplus manpower in non-agricultural employment cannot but be a gradual process. Basically, it is a question of stepping up the rate of investment and the rate of growth of the economy as a whole. In the meanwhile, however, the question of improving the economic conditions of the most disadvantaged section like the agricultural labour attains a sense of urgency. On the other hand, it seems also possible to step up the capital formation by undertaking local works mainly with the help of such surplus labour. Thus a type of "revolving" employment on local development works which could be undertaken with very small doses of capital can be provided; even this is contingent upon the economy's ability to augment the supplies of essential consumer goods, particularly, foodgrains and clothing. The rural works programme which was launched during the Third Plan and which now forms an integrated part of the Fourth Plan marks a significant step in this direction.

29 Annual Plan Progress Report 1966-67, *op. cit.*, p. 38.

CHAPTER XVIII

SOCIAL SERVICES

A review of Indian rural life would be incomplete without outlining the scope and developments achieved in the sphere of social services. Social services include education, medical care and public health, housing and other aspects of social welfare. An increasing amount of expenditure is being devoted to providing various social services. This has a wider objective of correcting the maladjustments in the present economic system and raising generally the levels of living of the community. It is now widely recognised that expenditure incurred on social services is a direct investment in human capital which is a necessary requisite for speedy economic growth. Expenditure on social services helps to remove social inertia, ignorance, indifference and apathy arising from them which prove bottlenecks in the rapid economic growth.

Between 1951-52 to 1965-66 expenditure on education, medical care and public health has increased in Indian States from Rs. 89 crores to about Rs. 522 crores and further to Rs. 707 crores in 1967-68. Table I gives the details of this expenditure for the States.

EXTENSION OF SOCIAL SERVICES

There has been a radical change in the aims and scope of State policy in respect of social services since Independence. Prior to this, the main concern of the Government was external defence and internal security. In matters of positive economic and social reform, the keynote of policy was *laissez faire*. The recurrence of famines in the nineteenth century, however, compelled the Government to undertake relief measures and programme of civil works on an extensive scale from time to time. The general attitude of passivity towards economic reforms had to be shaken off on account of pressure of developments both within the country and abroad which followed the development of liberal thought. The introduction of Diarchy in 1919 further streng-

TABLE I

EXPENDITURE ON SOCIAL SERVICES, INDIAN STATES: 1951-68

(Rs. in crores)

Year	Education	Medical and public health	Total of columns (2) and (3)
(1)	(2)	(3)	(4)
1951-52	60.3	29.2	89.5
1955-56	104.1	47.2	151.3
1960-61	195.4	80.8	276.2
1965-66	372.9	142.7	521.6
1966-67	419.7	171.0	590.7
1967-68 (R.E.)	501.5	205.9	707.4
1968-69 (B.E.)	537.6	225.0	762.0

(R.E.) = Revised estimates. (B.E.) = Budget estimates.

Source: *Reserve Bank of India Bulletin*, Vol. VII, No. 5, May, 1953, pp. 383 and 392; Vol XIII, No. 6, June, 1959, p. 679; Vol. XVII, No. 4, April, 1963, p. 453; Vol. XVIII, No. 5, May, 1964, p. 593; Vol. XIX, No. 5, May, 1965, p. 646; Vol. XX, No. 5, May, 1966, p. 480; Vol. XXI, No. 8, August, 1967, p. 1036; and Vol. XXII, No. 5, May, 1968, p. 583.

thened the popular demand for enlarging the nation-building activities. Little, however, could be achieved since the popular ministries had no control over finances. The intricacy of allotment of revenue between the Centre and the Provinces was still another factor hindering wider extension of social services. The political and administrative set-up of India till the attainment of Independence left little scope for the development of social services and progress recorded in this sphere was meagre relatively to the needs of the country and to that attained in other countries.

Since the advent of Independence, the allocations for social services have increased progressively. During the First and the Second Plan periods, the total expenditure on social services amounted to Rs. 1,289 crores. The outlay provided in the Third Plan was Rs. 1,300 crores,[1] but the actual expenditure has been estimated to increase to Rs. 1,422 crores.[2] The outlay in the

1 Third Five-Year Plan, Planning Commission, Government of India (1961), pp. 44 and 58.

2 Fourth Five-Year Plan—A Draft Outline, Planning Commission, Government of India (1966), p. 74.

defunct Draft Outline of the Fourth Plan is more than double of that in the Third Plan and amounted to Rs. 3,210 crores. In 1966-67, the expenditure on social services amounted to Rs. 264.37 crores or 12.4 per cent of the total annual plan expenditure of Rs. 2,137 crores in the public sector;[3] the outlay provided in the Annual Plan for 1967-68 is Rs. 330.05 crores (10.2 per cent) out of the proposed total outlay of Rs. 2,246 crores. Expenditure on vital services like education, health and housing is regarded as of a high priority and an attempt has been made in the three Five-Year Plans to implement, to the extent possible, the Directives of the Constitution in this regard. Limitations of resources, both internal and foreign, however, stand in the way of a more rapid advance. During the three Plan periods whereas expenditure on development has gone up more than four-fold that on social services has been trebled.

HEALTH SERVICES AND MEDICAL RELIEF

The control of contagious diseases and prevention of epidemics have attracted more attention than any other welfare activity because of their wide incidence and frequent recurrence in the country. Medical services in our country were originally designed to protect the health of the army and foreign personnel serving in the country. Till 1870 they were intended to improve, primarily, the health of the military and only secondarily that of the general population. The heavy mortality in times of famines and the outbreak of plague, malaria, etc., necessitated more active measures at the beginning of the present century but almost till the Reforms of 1919 the efforts were confined, more or less, to the promotion of sanitation by making it one of the most important duties of the local bodies. Progress was very slow even in the limited direction. The Reforms of 1919 transferred the responsibility of the administration of local medical and public health to the Provincial Governments. This considerably widened the field of activity, but the quality of work still suffered from the weak control of the Provincial authorities over the local bodies to whom the work was entrusted. The result was that only a fraction of the ground could be covered by these

3 Annual Plan Progress Report 1966-67, Planning Commission, Government of India (1968), p. 12.

provisions. Even in urban areas where the improvements are more marked than in the rural parts, the level of health services continues to be low.

The public health service is highly inadequate considering the needs of the rural masses. Table II gives the ratio of medical personnel to population available in India in 1965-66. The utter inadequacy of institutional facilities for the treatment of the sick specially in the rural areas is highlighted by the fact that the number of beds per 1,000 population was only 0.49 in 1966-67 as against 2 per 1,000 recommended by the Bhore Committee.[4] Besides, there were 5,083 primary health centres. These can at best treat annually only a fraction of the population, the bulk of the population thus being left to avail of whatever assistance, qualified or otherwise, they can secure locally. In 1946, there was 1 doctor to 6,300 persons in India as compared with 1 doctor to 1,000 persons in the United Kingdom. Even in 1966-67 the ratio of doctors to population remained at 1:5,600 in spite of the expansion in training facilities for doctors. This is expected to improve to 1:4,600 by 1970-71.

Health services are concentrated largely in urban areas owing to lack of amenities and gainful employment in rural areas. Nearly 75 per cent of doctors are in urban areas. The findings of the National Sample Survey[5] are pertinent in this connection. When the distribution of doctors between rural and urban areas is considered the picture looks disconcerting. While the vast majority of Indian people live in villages, the distribution of qualified doctors as between rural and urban India is just the inverse of the distribution of people as between these two sectors. According to this study, there was one allopath doctor for each 45 villages, one homeopath doctor for each 36 villages and one ayurvedic doctor for each 21 villages. The average distance of hospitals from sample villages was 13.8 kilometres (8.6 miles) as indicated by the twelfth round of the National Sample Survey.[5]

4 Report of the Health Survey and Development Committee, Vol. II—Recommendations, Government of India (1946), p. 64.

5 The National Sample Survey: Tenth to Twelfth Round: December, 1955-August, 1957—Report on Indian Villages (A Study of Some Social and Economic Aspects), Government of India (1961), pp. 20-21.

6 *ibid.*, p. 9.

TABLE II

RATIO OF MEDICAL FACILITIES TO POPULATION IN INDIA

	1946@		1950-51		1960-61		1965-66		1966-67		1970-71 (target)	
	No.	Ratio	No.	Ratio	No.	Ratio	No.	Ratio	No.	Ratio	No.	Ratio
Hospitals and dispensaries ...	7,400	1:40.000	8,600	1:41,500	12.600	1:35,000	14.600	1:34.000	—	—	—	—
Beds	73,000	0.24 per 1,000	1,13.000	0.31 per 1.000	1,85.600	0.40 per 1,000	2.40,100	0.50 per 1,000	2,46,682	0.49 per 1,000	3,00,100	0.49 per 1,000
Doctors	47,524	1:6.300	56.000	1:6.375	70,000	1:6,270	86,000	1:5,800	90,000	1:5,644	1,31,000	1:4,600
Nurses	7,000	1:43.000	15.000	1:24,000	27,000	1:16,270	45,000	1:11,000	50,000	1:11,288	87,000 to 90,000	1:6,200
Primary health centres ...	Nil		Nil		2,800	1:70,000*	4.957	1:1,00,700	5,083	1:1,00,000	5,200	—

@ British India.

* Population which the existing institutions actually serve.

Sources: Report of the Health Survey and Planning Committee (August. 1959-October, 1961), Vol. I, Ministry of Health, Government of India (1962), p. 72; Third Five-Year Plan, *op. cit.*, p. 653; Fourth Five-Year Plan—A Draft Outline, *op. cit.*, pp. 54, 339-343 and 352; and Annual Plan Progress Report, 1966-67, *op. cit.*, pp. 90 and 150.

Specialised services at present are available in hospitals and polyclinics in metropolitan towns and large cities which are not easily accessible to the rural population on account of difficulties of communications and transport facilities in the rural areas and the cost involved. Even in the existing Local Board dispensaries and such other centres, difficulties are felt in securing doctors to man them. The basic difficulty in extending health services lies in the lack of trained personnel. Even the existing institutions do not have their full complement of personnel. Shortage of teachers in the medical colleges has persisted and has ranged from 25 to 45 per cent. The number of teachers required during the Third Five-Year Plan was estimated at 2,500 against the original estimate of 2,000. During 1966-71, it is envisaged that about 4,000 specialists will be needed for providing specialised treatment in district hospitals and polyclinics.

Health Programmes

As against an outlay of Rs. 140 crores and Rs. 225 crores in the First and the Second Plan respectively, an outlay of Rs. 342 crores was provided in the Third Plan for health and family planning programmes. The anticipated expenditure in the Third Plan has been estimated at Rs. 357 crores. An outlay of Rs. 960 crores has been provided for different health programmes for the period 1966-71.[7] The overall target for the period 1966-71 is the establishment of 400 additional primary health centres, and 60,000 additional beds, raising the total number to 5,200 primary health centres and 3,00,100 beds. The number of medical colleges which was 30 in 1950-51 increased to 57 in 1960-61, further increased to 87 in 1965-66 and 89 in 1966-67. The number of annual admissions to medical colleges was raised from 2,500 to 5,800, further to 10,520 and 11,079 during the corresponding period. It is proposed to raise the number of medical colleges to 112 and annual admissions to 19,125 in 1970-71. Steps are being taken to augment the supply of teachers in medical colleges. The number of dental colleges trebled from 4 to 13 and annual admissions increased four-fold during the three Five-Year Plan

7 Fourth Five-Year Plan—A Draft Outline, *op. cit.*, p. 43. The expenditure in 1966-67 is estimated at Rs. 79.52 crores and the outlay in 1967-68 is Rs. 112.80 crores.

periods. In 1966-67, the number of dental colleges increased to 14 and total annual admissions stood at 550. It is proposed to raise the number of dental colleges to 16 and annual admissions to 1,000. Maternity and child health centres were proposed to be increased from 4,500 in 1960-61 to 10,000 in 1965-66. The outturn of doctors during 1966-71 is estimated at 45,000 in addition to 86,000 available by the end of the Third Plan. The number of nurses and auxiliary nurse-midwives is proposed to be increased from 45,000 and 35,000 in 1965-66 to 87,000-90,000 and 95,000 in 1970-71 respectively.[8] The facilities for post-graduate education which is the main source of medical teachers, specialists and research workers are proposed to be expanded from the existing annual intake of 800 to about 4,000 by 1970-71.[9] Training facilities for nurses and para-medical personnel are proposed to be augmented to overcome the shortage of qualified personnel.

Concerted programmes for sanitary reform, village planning and housing conditions are in their first stages over the major part of the rural India. The provision of protected water supply and sanitary methods of excreta disposal is a basic requirement in the prevention of diseases and morbidity in the community which largely arises from water-borne and allied diseases. Work on control of communicable diseases including malaria, filaria, tuberculosis, trachoma, smallpox, goitre, leprosy, etc., has been undertaken on a large scale in the Third Five-Year Plan. Malaria has been eradicated from vast areas under the National Malaria Eradication Scheme both in rural and urban areas. Special emphasis has been laid on eradicating smallpox during the Third Five-Year Plan through vaccination campaigns. Nearly 83 per cent of the total population of the country has been protected from smallpox. A beginning with health insurance has been made by providing medical facilities for industrial workers under the Employees' State Insurance Scheme and for the Central Government employees under the Contributory Health Service Scheme first introduced in Delhi. In the sphere of nutrition, diet surveys were undertaken at the instance of the Indian Council of Medical Research. The supply of wholesome milk is given increasing attention particularly in large cities. During the Second Plan,

8 *ibid.*, p. 352.
9 *ibid.*, p. 122.

about 1,649 family planning centres were set up in the rural and urban areas. This number increased to 12,138 by the end of the Third Plan. In addition to these centres, there were nearly 9,329 centres for distribution of contraceptives in rural areas. It is proposed to increase the total number of family planning centres to 48,045 by 1970-71.[10] In 1966-67, there were 19,694 family planning centres composed of 4,564 rural centres, 1,580 urban centres and 13,550 sub-centres.[11] It is proposed to recruit and train doctors and other medical personnel to implement the family planning campaign and to provide the supplies and services that go with it. It is intended to cover all the 5,200 community development blocks as well as the urban areas where there are large concentration of population.

RURAL HOUSING

Usually when one mentions the housing problem, one thinks only of urban housing and housing especially for industrial labour. But it would hardly come as a surprise to people who know village life that housing in the villages is also a serious problem, as the conditions prevalent are a great source of danger to the health, efficiency and even morality of the people. The improvement of housing conditions in the rural areas is a task of great magnitude. There are nearly 64 million houses in rural areas[12] most of which require to be rebuilt. From the investigation of the housing conditions in 1,768 sample villages by the National Sample Survey (Twelfth Round: March-August, 1957), it is noticed that 67 per cent of the households representing 73 per cent of the population lived in houses which were all *kachcha*, while another 14 per cent of the households representing 9 per cent of the population were putting up in almost *kachcha* structure (*kachcha* plinth and wall with fabricated roof) as against 1.40 per cent of households (2 per cent of population) in all *pucca* type of houses. Further, about three-fourth of the households had only two rooms to live in (as much as 44 per cent in one room) and average floor space per person was only 78 sq. ft., varying from 57 sq. ft. to 290

10 Fourth Five-Year Plan—A Draft Outline, *op. cit.*, pp. 70 and 347-348.

11 Annual Plan Progress Report 1966-67, *op. cit.*, p. 94.

12 Census of India 1961, Vol. I, India, Part IV (B)—Housing and Establishment Tables, Government of India (1964), p. 16.

sq. ft., according to per capita expenditure level per month. Another distressing feature is that nearly 97 per cent of the households did not have any built-up latrine. Only 2 per cent of the households had the privilege of such latrines for individual use while 1 per cent more used these in common with other households.[13]

The designs of houses in villages even for the privileged or better-off sections of the population do not provide for the minimum requirements of light, ventilation and drainage. The artisans and other village craftsmen live and work under conditions which are a serious impediment to the adoption of improved techniques. The congestion which exists in the areas where the scheduled castes, and other backward classes reside is the worst. This emphasizes the need for finding additional sites for rearrangement of the village sites.

The prevailing housing conditions indicate the urgent need for a plan for every village which will provide for the improvement of rural housing as a part of general rural development. There are, however, certain specific measures which can be taken in the short period. The problem of housing in rural areas does not call for a large financial outlay. The bulk of the materials used is locally available and there is considerable scope for voluntary co-operative labour and local community action. The rural housing programme is, therefore, essentially in the nature of aided self-help programme in which education and guidance play a large part. The two principal ways in which the State can assist in the improvement of standards of housing in the villages are (1) through the demonstration of model houses built in selected areas, and (2) building better type of houses at a low cost within the means and resources readily available to them in the locality. It is estimated that the money cost of a house built with the villager's own labour is not likely to exceed Rs. 200 to Rs. 300 per unit. What the State can do, therefore, is to undertake pilot projects to construct such low cost units and disseminate information on the experiments made in cheap housing in the various parts of India. In Puerto Rico

13 The National Sample Survey: Twelfth Round: March-August, 1957, Number 67—Tables with Notes on Housing Condition, Cabinet Secretariat, Government of India (1962), pp. 6-10 and 44.

a similar programme of aided self-help in housing has yielded good results. Conditions obtaining there are similar in many ways to those obtaining in this country. The principle as practised in Puerto Rico may be usefully adopted in India in areas which offer scope.

Progress During the Five-Year Plan Periods

When the First Plan was launched, the housing programme was mainly directed towards housing for industrial workers and low income groups. The programme was considerably expanded during the Second and the Third Five-Year Plan with the introduction of schemes of slum clearance and slum improvement, plantation labour housing, village housing and land acquisition and development.

Improvement in housing conditions in the villages has a manifold significance. It raises the level of living, provides greater opportunities for work and is a vital element in the transformation of rural life. Yet, because of the magnitude of the problem and its inherent difficulties, the task of improving housing conditions in the villages had to be viewed during the course of the First Plan not as an isolated objective but as a part of the larger scheme of rural development. Consequently, rural housing was considered to be an intrinsic part of community development and village planning. It was against this background that the specific programme of village housing scheme was introduced in 1957, *i.e.*, in the middle of the Second Plan.

The village housing scheme provided for selection of villages in group of four to six and the preparation of lay-out plans for these villages after carrying out socio-economic surveys. The implementation of lay-out plans and rebuilding of houses have been taken up in stages so that the entire village might be remodelled in a period of 8 to 10 years. Co-operatives for the manufacture of different building components have been organised. The quantum of loan assistance for building up houses has been raised to 80 per cent from $62\frac{2}{3}$ per cent of the cost of construction, subject to a maximum of Rs. 3,000, instead of Rs. 2,000 per house. Loans are also given for carrying out improvements in the existing houses in accordance with the

standards prescribed by the State Governments. Provision has also been made in the scheme for acquisition of land required for streets, community buildings, new house sites and for thinning out densities, etc. Research-cum-training centres were established at six centres for promoting research in improving local building materials and construction techniques and for training personnel required for executing the scheme. The rural housing cells set up in the States for preparing lay-out plans and model designs, etc., have been further strengthened.

During the Second Five-Year Plan, about 3,700 villages were selected and socio-economic and physical surveys of about 2,000 villages were completed. Lay-out plans of 1,600 villages were drawn and loans amounting to Rs. 3.6 crores were sanctioned for construction of about 15,400 houses. About 3,000 houses were completed and the remaining houses were under different stages of construction.[14] By the end of the Third Plan, the village housing project covered 5,547 selected villages, of which 5,117 were surveyed. The scheme was actually implemented in 2,913 villages. The number of houses completed was 33,576 and loans sanctioned to villagers amounted to Rs. 6.74 crores.[15]

As against a financial provision of Rs. 10 crores in the Second Plan and Rs. 12.7 crores in the Third Plan, the actual expenditure on rural housing programmes was only Rs. 3.76 crores and Rs. 4.41 crores respectively. In the Second Plan, 7,185 houses were built against a target of 1,33,000 and in the Third Plan, 25,188 houses were constructed against a target of 1,25,000, the achievement being only 5.4 per cent and 20.1 per cent of the targets respectively.[16] The shortage in 1966-67 was estimated at 62.7 million houses in the rural areas. The allocation on village housing scheme for the period 1966-71 is Rs. 25 crores and it is proposed to build 3 lakh houses. During

14 Third Five-Year Plan, *op. cit.*, pp. 693-696.

15 India in Perspective: 1947-67—Two Decades of Freedom, Fact Sheet 8—Housing, Ministry of Information and Broadcasting, Government of India (1967).

16 Estimates Committee (1967-68)—Third Report (Fourth Lok Sabha), Ministry of Works, Housing and Supply (Rural Housing), Lok Sabha Secretariat, Government of India (1967), pp. 9 and 11.

1966-67, the expenditure on village housing projects scheme amounted to Rs. 71 lakhs and 3,460 houses were constructed against a target of 4,083 houses. The leeway to be made up in the matter of rural housing is stupendous.

VILLAGE WATER SUPPLY

Better supply of clean drinking water and sanitation are part of the public health programme. In the absence of this facility, people suffer from many diseases and fall prey to epidemics like cholera. A majority of villages has no adequate and protected water supply. A quick survey conducted by the Department of Community Development of the Government of India through the Block organisation revealed that about 30 per cent of the villages/hamlets still have inadequate water supply and about 25 per cent are without a satisfactory source of water supply.[17] In some places the water is contaminated as the same source is used for drinking purposes as well as for washing, including the washing of animals. In some cases, the natural supply is short; in others, there is lack of proper care. The National Sample Survey conducted in March-August, 1957 revealed that 69 per cent of households used tanks and ponds for drinking water. While another 12 per cent of households could get tube-well water supply, 9 per cent depended on rivers and lakes as their principal source. Only 6 per cent of households used wells for drinking water. Municipal tap-water supply was almost unknown to rural areas.[18] Adequate arrangements for the supply of water needed for various purposes should be a primary responsibility of the local body in charge, and proper supervision in this respect by officials is an obvious corollary of the same.

Problems of rural water supply vary from region to region and often within the same region. In the first three Five-Year Plans rural water supply schemes have been taken up mainly under the programmes for community development, local development works and welfare of backward classes. These are supplemented by the national water supply and sanitation programme under Health which deals with the provision of water

17 Fourth Five-Year Plan—A Draft Outline, *op. cit.*, p. 350.

18 The National Sample Survey: Twelfth Round: March-August, 1957, Number 67, *op. cit.*, pp. 9 and 33.

supply to groups of villages through works requiring major technical skill in design and construction. The programme gives priority to areas of great water scarcity and salinity and those in which water-borne diseases are endemic. Altogether 644 schemes of rural water supply were approved during the first three Plans at an estimated cost of Rs. 44.21 crores and 17,000 villages were provided with water supply through pipes. About 7 lakh wells were newly constructed or renovated till the end of the Third Plan.[19]

In spite of the efforts made during the first three Plans, the back-log to be covered in rural water supply and sanitation facilities is still very large. A sum of Rs. 150 crores has been allocated for this scheme during the period 1966-71, which is three times that in the Third Plan.[20] During 1966-67, the expenditure on rural water supply schemes amounted to Rs. 5.64 crores and 135 rural water supply schemes estimated to cost Rs. 7.72 crores were approved in various States and Union Territories. The greater part of the amounts provided for the village water supply programme is intended to be available for (*a*) backward areas, (*b*) areas not covered by the community development programme, (*c*) pre-extension blocks, and (*d*) blocks which have completed their first and second stage in the community development programme. The village water supply programme is intended primarily to deal with the rural water supply at the village level. As a rule, a ceiling of Rs. 10,000 per village is proposed to be observed. The public contribution is generally expected to be about 50 per cent, but this proportion may have to be modified in poor and backward areas or areas where technical conditions are unfavourable. Schemes for groups of villages involve provision of piped water supply and works of an engineering character are to be taken up by provisions under the health programme. The village water supply programme has been undertaken at the block level through *Panchayat Samitis* and Village Panchayats, the funds being routed through the organisation at the block level. It has been proposed that there should be a broadly agreed programme at the local level so that

19 Fourth Five-Year Plan—A Draft Outline, *op. cit.*, pp. 349-350.

20 *ibid.*, p. 349.

all the provisions available for water supply may be effectively used.

Along with rural water supply, greater attention has been given to the programme of rural sanitation, specially to the sanitary disposal of excreta in villages during the Third Five-Year Plan. Problems relating to the proper designs and construction of village latrines and the educational and organisational aspects of the programme for their promotion have been recently studied. The broad lines of an action programme in this field may be said to be fairly well established. Although in the beginning progress may be slow it is important that in each development block, effort should be made to create greater awareness of rural sanitation problems and to introduce the use of sanitary latrines in schools and camps and, where possible, in individual houses. It would facilitate introduction of latrines if the local sanitary inspectors are trained in casting the latrine sets. With the co-operation of the local people these latrines can be constructed at a fairly low cost. If this work is undertaken as a block programme it should be possible to achieve substantial results within a foreseeable period. Health education is of course the most important aspect of the programme of rural sanitation. The advantages and convenience of clean, odourless and cheap latrines are obvious. They are no less essential for conserving the fertilizer value of human wastes and enriching the soil.

EDUCATION

Education is in many ways the most important of social services. It increases the capacity of the people to participate intelligently in public affairs. Education is a vital element in the development of individuality; it is also an instrument for fostering and strengthening socially useful skills, habits and attitudes and creates bonds of common citizenship. Education is an essential factor in achieving rapid economic development and technical progress and in creating a social order founded on the values of freedom, social justice and equality of opportunities. The higher the standard of education, the better the results of other social services. In 1950-51, only 19.2 million children in the age-group 6 to 11 were receiving primary educa-

tion. Provision of facilities for schooling of children in the age-groups 6 to 11 and 11 to 14 was available for 3.1 million and 1.2 million in the respective age-groups. The growth of educational facilities since 1950-51 and the targets set for 1970-71 are shown in Table ~~III~~.

TABLE ~~III~~

PROGRESS OF EDUCATION DURING THE FIVE-YEAR PLANS

Stage and age-group	1950-51	1955-56	1960-61	1965-66 (likely achievement)	1970-71 targets
Primary (6-11)					
Enrolment (lakhs)	191.5	251.7	349.9	515.0	695.0
Percentage of the age-group	42.6	52.9	62.2	78.5	92.2
No. of primary schools (in thousand)	209.7	278.1	330.4	405.9	N.F.
Middle (11-14)					
Enrolment (lakhs)	31.2	42.9	67.0	110.0	190.0
Percentage of the age-group	12.7	16.5	22.5	32.2	47.4
No. of middle schools (in thousand)	13.6	21.7	49.7	72.6	N.F.
Secondary (14-17)					
Enrolment (lakhs)	12.2	18.8	29.6	52.4	90.0
Percentage of the age-group	5.8	7.8	11.7	17.8	22.1
No. of secondary schools (in thousand)	7.3	10.8	17.2	24.1	N.F.
Total (6-17)					
Enrolment (lakhs)	234.9	313.4	446.5	677.4	975.0
Percentage of the age-group	25.4	32.1	40.2	52.4	62.4
Total No. of schools	231	311	397	503	N.F.

Source: Fourth Five-Year Plan—A Draft Outline, *op. cit.*, pp. 69, 326 and 328.

N.F. = Not fixed.

Over the last fifteen years, the number of students increased from 23.5 million to 67.7 million. The increase in the number of pupils in the age-group 6-11 was 84 per cent, in the age-group 11-14, 154 per cent, and in the age-group 14-17, 207 per cent. The proportion of children in the three age-groups attending schools rose respectively from 43 to 79 per cent, from 13 to 32 per cent and from 6 to 18 per cent. By 1970-71, the total number of pupils at school is expected to go up by 29.8 million — 18 million in the age-group 6-11, 8 million in the age-group 11-14 and 3.8 million in the age-group 14-17.

There is however a glaring disparity in the percentage of enrolment of boys and girls. In 1960-61, about 80.5 per cent of the boys in the age-group 6-11 were in primary schools as against about 40.4 per cent of the girls. At the middle school stage, as against 34 per cent of the boys only about 11 per cent of the girls in the age-group 11-14 were at school. At the secondary stage, girls constituted less than one-fifth of the total number attending schools. As a result, the number of qualified women available for the posts of teachers, nurses, *gram sevikas*, social education organisers, etc., is inadequate. Since the First Plan sustained efforts have been made to extend facilities for the education of girls. As a result, the disparity in the percentage of enrolment of boys and girls has narrowed, but is still considerable. Between 1950-51 and 1965-66, girl students as a percentage of their population in the relevant age-group increased from 24.6 per cent to 56.2 per cent in primary schools, from 4.5 per cent to 16.7 per cent in middle schools and from 1.8 per cent to 7.8 per cent in secondary schools.

It will be seen from Table III, during the period 1950-65, the number of schools increased more than two-fold from 2,31,000 to 5,03,000; the increase in the number of primary schools was about 94 per cent, in middle schools 434 per cent and in high schools 230 per cent. (The number of pre-primary schools increased from 303 in 1950-51 to 3,500 in 1965-66. The number of children enrolled in pre-primary schools increased from 28,000 to 2.5 lakhs during the same period. In 1965-66 there were about 20,000 *balwadis* in rural areas with a total en-

rolment of about 6 lakhs.[21] It is estimated that 3.5 million additional children were enrolled in schools in 1966-67; the additional enrolment in the primary, middle and secondary stages being 2.26 million, 0.85 million and 0.4 million respectively.[22] A most important development in the field of education in recent years has been the acceptance of basic education by the country as the pattern for the education of children of the age-group 6-14. Progress in basic education at the primary stage is reflected in the number of junior and senior basic schools. The number of junior basic schools almost doubled during the decade 1950-61. Their number was 64,000 in 1960-61 and increased to 78,937 in 1962-63. The number of senior basic schools increased from 351 in 1950-51 to 14,000 in 1960-61, and to 16,745 in 1962-63.[23] The enrolment of boys and girls at primary and middle school stage increased to 62.5 million in 1965-66 and 65.6 million in 1966-67. Reorganisation of secondary education has mainly taken the form of conversion of high schools into higher secondary schools, establishment of multi-purpose schools providing for a variety of courses. The number of secondary educational institutions, including higher secondary schools and multi-purpose schools, increased from 7,300 in 1950-51 to 19,500 in 1960-61 and to 26,800 in 1965-66. The total number of students enrolled in secondary schools was 5.24 million in 1965-66 and 5.64 million in 1966-67. With the expanding base at the primary and secondary education, there has been a great increase in the demand for higher education since Independence. The number of universities has risen from 27 in 1950-51 to 70 in 1967 and the number of arts, science and commerce colleges has increased to 2,700. Enrolment in the latter has gone up from 3 lakhs in 1950-51 to 11 lakhs in 1965-66. The proportion of students taking science courses increased from 27 per cent in 1960-61 to 40 per cent in 1965-66. It is envisaged that of the increase of 5 lakh students at the university stage by 1970-71, 72

21 Report of the Education Commission (1964-66)—Education and National Development, Ministry of Education, Government of India (1966), p. 149.

22 Annual Plan Progress Report 1966-67, *op. cit.*, p. 81.

23 Third Five-Year Plan Progress Report 1961-62, Planning Commission, Government of India (1963), p. 148; and Annual Report 1965-66, Ministry of Education, Government of India (1966), p. 9.

per cent would be in science classes, bringing the percentage of students taking science courses to 50. While facilities for education are, in general, less than adequate, those for women's education are even more unsatisfactory.

The Report of the Sargent Committee on Education (1944) visualised a national scheme suited to the minimum requirements of the country. The estimated cost of the scheme at the end of 40 to 50 years when it was expected to be fully established, was Rs. 313 crores, of which Rs. 277 crores or 88.5 per cent were to be drawn from public funds. The Education Commission (1964-1966) has observed in its report that in comparison with the last 15 years, the programme of educational development to be undertaken during the next two decades will be greater in magnitude. It has estimated that the educational expenditure will increase to Rs. 1,556 crores by 1975-76 and Rs. 4,036 crores by 1985-86, of which about 90 per cent would have to be drawn from Government funds.[24] The inadequacy of the level of expenditure on education visualised by the Sargent Committee becomes obvious when it is compared with the actual expenditure of Rs. 600 crores incurred in 1965-66, of which about 71 per cent came from Government.[25] Current programmes on education draw heavily upon the deliberations of the Secondary Education Commission established in 1954 and the University Education Commission in 1949.

During the last fifteen years, the total expenditure on education increased by 424 per cent or at a cumulative annual rate of growth of 11.7 per cent. The outlay on education proposed in the defunct Draft Outline of the Fourth Five-Year Plan is Rs. 1,210 crores which is about 8 per cent of the total Plan outlay. The Centre has been financing education programme to an increasing extent since the beginning of the First Five-Year Plan, its share having increased from 4.6 per cent in 1950-51 to 12.7 per cent in 1960-61 and to about 14.7 per cent in 1965-66. School buildings are being expanded and new construction taken in hand. The scheme of compulsory education has been introduced in several States and in 1961-62, 98,706 villages and about

24 Report of the Education Commission (1964-66), *op. cit.*, pp. 472-473.
25 *ibid.*, p. 471.

1,445 towns were covered under this scheme..[26] In more than ten States the programme of mid-day meals for children of primary schools has been launched with the assistance of international and foreign agencies. By the end of the Third Plan, 9 million children were served a mid-day meal every day of the week.[27] (Per capita expenditure on education in India steadily increased from Rs. 3.2 in 1950-51 to Rs. 7.8 in 1960-61 and to Rs. 12.1 in 1965-66,[28] indicating the Government's determination to expand educational facilities as a necessary instrument of development planning.)

(The All-India Education Survey conducted by the Union Ministry of Education during 1957-59 revealed that in 1957, out of a total number of 8.4 lakhs of rural inhabitations with a population of 27.96 crores, 2.4 lakhs or 29 per cent of the rural inhabitations with a population of 4.72 crores or 17 per cent of the total were not served by any school.[29] In some States the proportions were very much higher. The Constitution envisaged the provision of free, universal and compulsory education for children up to the age of 14 years by 1961. This objective has not materialised, and is not expected to be achieved before 1981.) Meanwhile, it has been urged that as a first step, facilities should be created for the education of all children in the age-group 6-11, to be followed by extension of education for the entire age-group 11-14 during the Fourth and the Fifth Plans. (Primary education up to the fourth class is free throughout the country and education up to the eighth class is free in nine States and in all Union Territories.) In spite of the Directives of the Constitution, only 63 per cent of the children in the age-group 6-14 —78.5 per cent of the children in the age-group 6-11 and 32 per cent of them in the age-group 11-14—were provided such education by 1965-66. This percentage for the corresponding age-groups is expected to increase to 76.7, 92.2 and 47.4 by 1970-71. The proportion of pupils to total number of children in the secondary stage, *i.e.*, 14-17 age-group was only 19 per

26 Education in India 1961-62, Vol. II—All-India Tables, Ministry of Education, Government of India (1966), p. 100.

27 *Yojana*, July 9, 1967, p. 17.

28 Report of the Education Commission (1964-66), *op. cit.*, p. 465.

29 Report of the All-India Educational Survey, Ministry of Education, Government of India (1960), p. 269.

cent in 1966-67 and would increase to only 22 per cent by 1970-71. From this the magnitude of the task of meeting the Directives would be clear. (Institutes of Technology are expanded to increase our 'know-how' and to build up a large number of technocrats required for public as well as private sectors. Differences in the levels of schooling facilities between the States will be narrowed to some extent but will still continue to be quite considerable. An immediate problem is one of removing the wastage which exceeds 60 per cent at the primary stage, and 50 per cent at the secondary stage.[30]) (In considering the programmes for education, it has to be borne in mind that the problem is not merely one of multiplying the facilities along traditional lines, but of diversifying the system and adapting it to the new needs of a developing economy. This has found adequate expression in the Report of the Education Commission (1964-66).)

(The Education Commission set up in July, 1964 to advise the Government on the national pattern of education and on the general principles and policies for the development of education at all stages and in all aspects has recommended that Indian education needs a drastic reconstruction, almost a revolution.[31] The Commission in its report has discussed the major programmes that can bring about this educational revolution which has three main aspects: "(1) internal transformation so as to relate it to the life, needs and aspirations of the nation; (2) qualitative improvement so that the standards achieved are adequate, keep continually rising and, at least in a few sectors, become internationally comparable; and (3) expansion of educational facilities broadly on the basis of manpower needs and with an accent on equalization of educational opportunities." It has emphasized that education should relate to productivity and should hasten the process of modernisation and strengthen social and national integration. Science education should become an integral part of school education and ultimately become a part of all courses at the university stage also. It has recommended that the system of education should be work-oriented though now it is knowledge-oriented and it should attempt to forge a

30 Fourth Five-Year Plan—A Draft Outline, *op. cit.*, pp. 313-315.

31 Report of the Education Commission (1964-66), *op. cit.*, pp. i, 5-13, 29-38, and 251-257.

link with technology. It has underscored the need to bring about major improvement in the effectiveness of primary education, to vocationalize secondary education, especially at the secondary school level to meet the needs of industry, agriculture and trade, to improve scientific and technological education and research with special emphasis on agriculture and allied sciences, to improve the quality of teachers at all levels and to provide teachers in sufficient strength. It also suggested the development of modern Indian languages and Hindi as the medium of instruction at all levels. The Commission has recommended that at the school stage immediate efforts should be made to increase the intensity of utilisation and to improve the quality of inputs, other than time. It has visualised a new educational structure consisting of one to three years of pre-school education, a ten-year period of general education sub-divided into a primary stage of 7 to 8 years and a lower secondary stage of 3 to 2 years or 1 to 3 years of vocational education, a higher secondary stage of 2 years of general education or 1 to 3 years of vocational education and a higher education stage having a course of 3 years or more for the first degree and followed by courses of varying duration for the second or research degrees.

With a view to achieving social and national integration, it has recommended the adoption of the common school system of public education as a national goal and its effective implementation in a phased programme spread over 20 years. As a step towards eliminating the segregation that now takes place between the schools for the poor and the under-privileged classes and those for the rich and the privileged ones, it has recommended the adoption of the neighbourhood school concept first at the lower primary stage and then at the higher primary within a period of 20 years under which all children in the neighbourhood will be required to attend the school in the locality. It has suggested that social and national service should be made obligatory for all students at all stages and should be organised concurrently with academic studies in schools and colleges.

It is proposed to intensify the enrolment drive at the primary stage to bring the maximum number of children in schools towards the achievement of the Constitutional Directive. At the

secondary stage, vocational education and diversification of courses have been given due emphasis to make education terminal at this stage. (Admission at the university stage would be restricted to those who can really benefit by higher education. Highest priority would be given to schemes of qualitative improvement in all sectors of education. Special measures for girls' education have been included to accelerate enrolment of girls in order to remove disparity between boys and girls. It is proposed to link education more intimately with other programmes of economic development and to introduce a bias to manual work and productivity at all stages.)

SOCIAL EDUCATION

(Social education denotes an all-inclusive programme of community uplift through community action. The programme under the new approach of social education embodies mainly five related stages of work which includes literacy; knowledge of the rules of health and hygiene; training for the improvement of the economic status of adults; a sense of citizenship with an adequate consciousness of rights and duties; and healthy forms of recreation suited to the needs of the community and the individual.) This programme is supported through libraries opened with State help supplemented by locally raised resources. The object of the entire programme is to correlate the relevant knowledge at every stage with a gainful activity and the social and economic needs of the villagers.

(The work in the field of social education has been mostly confined to literacy and to some extent recreation. The literacy percentage which was 8.3 in 1931 increased to about 24 in 1961 and to 28.6 in 1965-66. The serious disparity in literacy between men (34.4 per cent) and women (12.9 per cent) and between the urban population (46.9 per cent) and the rural population (19 per cent) constitutes a special problem in social education.[32] The 1961 Census mentions that the progress of general literacy has been sluggish throughout the country.) It has increased at an average rate of 0.7 per cent per year for the general population,

32 Census of India, Paper No. 1 of 1962, 1961 Census—Final Population Totals, Government of India (1962), p. 331.

0.9 per cent for males and 0.5 per cent for females. With the introduction of *Panchayati Raj* at the district and block levels, it is imperative that a substantial proportion of adult population become capable of reading and writing. Most of the post-literacy work is done through libraries, though due to dearth of literature, the library movement has not made much headway particularly in the villages. Of late, the importance of recreation and cultural activities in programmes of social education has been increasingly recognised. Existing forms of folk art like dance, drama, puppet shows, *bhajans, kirtans,* fairs and festivals have been used, but without any systematic attempt to develop and fully exploit their potentialities as mass media of education and extension. They should increasingly be utilised as communication channels for developing a progressive outlook and the growth of a sense of shared citizenship. Modern means of mass education like the film and the radio have attracted attention but have not been effectively used partly as they are costly media. In a few institutions, attempts have been made to improve the economic conditions of the villagers by teaching them crafts and adoption of improved practices in agriculture. All-round social education work has been done by some of these basic institutions, besides co-operatives which have also been used as an agency for social education. In the community development blocks social education organisers are assigned an important role of educating the villagers in the ideology of community projects and national extension. The Education Commission has suggested a two-fold strategy comprising the selective approach and the mass approach for combating illiteracy in the country.[33] The selective approach is concerned with the adoption of programmes for specified groups of adults which could be easily identified, controlled and motivated for intensive literacy work. Under the mass approach, it has been suggested that all available educated men and women in the country should be mobilised for raising a force to combat illiteracy and utilise it in a well-planned literacy campaign. It has suggested the active involvement of teachers and students and all educational institutions in the organisation of mass campaign. The new responsibility related to

33 Report of the Education Commission (1964-65), *op. cit.*, pp. 426-428.

adult education implies a significant transformation in the function and outlook of the school as a centre of community life.

For adapting and extending the education system in keeping with the requirements of a planned economy, a heavy responsibility lies on the Central, State and Local Governments. The methods and techniques of teaching need improvement. The scales of pay of teachers at all stages require to be improved. Technical and vocational training facilities call for urgent expansion. The colleges and universities need larger funds for staff and equipment. The resources available for all these purposes are limited. It is inevitable to an extent that in the early stages of planning, productive investment gets a priority over social development, including education. It has, nevertheless, to be borne in mind that the education and training of men and women is the very basis of economic and social progress. Developmental planning aims, in the last analysis, at making life richer and ampler for the individual, and it is only in truism to say that investment in education and the improvement of the intellectual and moral standards of the mass of citizens is, in a vital sense, the most productive of all investments.

PART V

PART V

CHAPTER XIX

INDIAN AGRICULTURAL DEVELOPMENT IN THE THREE PLANS

The need for an integrated approach to the problems of rural life and, indeed, to economic development in all its aspects—which has been the main theme of this book—is now well recognised. Such an approach is, in fact, the very cornerstone of India's successive Five-Year Plans. The aim of this chapter is to set forth concisely the objectives, techniques and achievements of the three Five-Year Plans that India has completed and to outline the tasks that have been envisaged for the Fourth Five-Year Plan, which commenced in April, 1969.

The key role of agriculture in promoting and sustaining a rapid rate of economic development in the country has been a major theme of each of the three Plans and the importance of achieving a real break-through on this front has, if anything, been highlighted further in the Draft of the Fourth Plan that has recently been published. The concept of a high priority for agriculture appears simple and somewhat self-evident in enunciation, but the real problem is one of giving the right content to this concept and of translating it into concrete programme that would secure the results desired. In addition, the priority status must be reflected in the arrangements for implementation, and this often covers both economic policies and institutional change. Each of the three Five-Year Plans that have been completed has made some contribution to this process of articulating the programmes, policies and follow-up action that must necessarily accompany the assignment of a high priority to agricultural development, and it is proposed to present in this chapter a review of these developments.

OBJECTIVES OF PLANNING

In broad terms, the principal objective of developmental planning is the raising of living standards of the people. Clearly, this can be done only as the community is able to enlarge progressively the annual flow of goods and services that it produces. This involves changing the production functions all over the economy—the securing of larger outputs by using or promoting new factor combinations. An important aspect of this—and in a sense, the most crucial—is capital formation. Unless the stock of tools and equipment per head of population is increased, the national product cannot be enlarged significantly. For a country with a large and diverse population and a relatively small surplus of savings for investment the task involved is colossal.

The simple objective of raising living standards links up with a number of other social objectives. The first question one necessarily asks is: whose living standards are to be raised? Clearly, a development process that benefits the few and makes little impression on the modes of work or employment opportunities or living standards of the bulk of the people cannot be regarded as socially desirable or satisfactory. Equality and social justice together with a wide diffusion of economic initiative and power are as vital to social welfare as the raising of overall national income as such. Undoubtedly, these objectives are interlinked if one takes a long-term view of the process of development. There are, however, difficult choices in the short run. For example, should the aim be to maximise the rate of growth of the economy over a longish period, or, should it be to secure as large an increase in the supply of consumption goods as possible in the near future? In what proportion should the resources available for investment be distributed between agriculture, industry, transport, power, social services and the like? To what extent should the need for maximising employment opportunities in the short run influence decisions regarding the choice of production techniques? What, again, should be the weight to be attached to the broader social objectives just mentioned such as reduction of inequalities or diffusion of economic power? These could entail some slowing down of the rate of growth of production. Clearly, planning involves a difficult balancing of these various objectives and choices

and the success of the entire effort depends on evolving a 'strategy' that enables the community, on the whole, to put forth the maximum effort and to retain the zeal for further orderly advance in the years to come.

The objectives as well as the techniques of planning have thus to be related to the pattern of economy one envisages. India's approach to this question is indicated in the Directive Principles of State Policy enunciated in the Constitution. Under these 'Principles,' the State shall strive to promote and establish a social order in which justice—social, economic and political, shall inform all the institutions of national life. In particular, the State shall direct its policy towards securing (*a*) that the citizens, men and women equally, have the right to an adequate means of livelihood; (*b*) that the ownership and control of the material resources of the community are so distributed as best to subserve the common good; and (*c*) that the operation of the economic system does not result in a concentration of wealth and means of production to the common detriment. We have, in these Principles, the germ of what later came to be termed more explicitly the socialist pattern of society.

The implications of the socialist pattern were spelt out in the Second and Third Five-Year Plans. Broadly, the idea is that the State should endeavour through fiscal, monetary and other policies as well as through its own investments to secure a pattern of economic and social change that would not only raise incomes all-round but would tilt the balance decidedly in favour of those classes and sections of the community that have hitherto remained backward and under-privileged. The accent is on the positive aspects: the raising of living standards, the enlargement of opportunities for all, the promotion of enterprise among the disadvantaged classes and the creation of a sense of partnership among all sections of the community. From this follows the stress not only on public enterprises and public investment but also on co-operative effort in agriculture, small-scale industries, housing and a number of other fields.

THE PLANNING COMMISSION

With a view to promoting the co-ordinated thinking and action needed for securing these objectives and goals, the Planning Com-

mission was set up early in 1950. It has always been regarded as a high-powered body close to the Prime Minister and the Cabinet, functioning as an advisory agency with tasks going much beyond the formulation of a development programme for the next few years ahead. The Commission is required by its terms of reference to make an assessment of the country's resources and needs, to work out priorities and to indicate the stages by which the development process should be carried through, to present plans of development for particular periods, to review from time to time the progress being achieved in various directions and to make recommendations to Government on problems and policies relevant to the pursuit of rapid and balanced economic development. Over the years, the Planning Commission has, besides, formulating the successive Five-Year Plans, undertaken and promoted a number of studies on both the immediate and the longer-term problems of the Indian economy, including problems of special relevance to agriculture such as, land reforms, co-operation and extension work. Planning has given a new dimension and content to economic thinking and to official policy formulation and appraisal. In the nature of things, the course of planning rarely runs smooth, and the Indian economy has, over the last two decades, run into serious troubles from time to time. The Planning Commission is only an advisory body, with no executive responsibilities, but such a body can play a very valuable part in bringing back into focus the objectives, the effort and the achievements in terms of a wider perspective that often tends to get lost in the din and bustle of day-to-day or short-term policy adaptations.

In view of the difficulties that the Indian economy encountered in the latter part of the Third Plan period and the consequent need for resetting the sights and reformulating the development programmes and policies for the period ahead, the Planning Commission was reconstituted in September, 1967. The Draft Outline of the Fourth Plan worked out earlier was shelved as the conditions for its successful implementation were judged to be not propitious. There was an interregnum of three years between the end of the Third Plan period (1965-66) and the commencement of the Fourth Plan (1969-70). For each of these

three years there were only annual Plans. The Fourth Plan, as outlined in the Draft published in March, 1969, aims at a resumption of the process of planned development in the light of a careful review of the achievements and shortcomings of the previous Plans and especially of the factors responsible for the serious imbalances in the economy that developed since 1965-66. It will be apparent even from this bare recital of developments that the processes of planned economic advance are as yet far from having been mastered and that far better economic performance is needed before the economy can be said to have got set on the right path.

AGRICULTURE IN THE FIRST TWO PLANS

The First Five-Year Plan (1951-56) concentrated on building up the infrastructure of development and carrying through a number of projects or schemes that had already been commenced earlier under what were called the post-war reconstruction programmes. The Plan accorded the highest priority to agriculture. Of the total outlay of about Rs. 2,356 crores in the public sector, some 31 per cent was allocated to agriculture, irrigation and community development, panchayats and co-operation.

Table I shows the progress of agricultural production over the period of the First Five-Year Plan.

The index of agricultural production went up by 22 per cent over the five-year period. The output of foodgrains in 1955-56 was 4 million tonnes larger than the target set in the Plan. Cotton and jute also recorded substantial increases, although the achievement in respect of these crops as well as of sugarcane was below the targets. Altogether, however, the performance of the agricultural sector exceeded expectations. Midway in the Plan, agricultural prices fell sharply and the problem, in fact, was how to raise the level of investment in the economy sufficiently to create the necessary demand for absorbing the increased agricultural output at remunerative prices. Part of the increase in agricultural production was, however, due to good monsoons and there was clearly no basis for any assumption that the problem of securing larger yields progressively from agriculture was either solved or was in the process of being mastered.

TABLE I

AGRICULTURAL PRODUCTION : FIRST FIVE-YEAR PLAN

(in million tonnes)

	Production						Additional production in 1955-56 over 1950-51	First Plan target	
	Base year 1950-51	1951-52	1952-53	1953-54	1954-55	1955-56		Addi-tional	Total
Rice	23.5*	21.3	22.9	28.2	25.2	27.6	4.1	4.1	27.6
Wheat	6.4*	6.2	7.5	8.0	9.0	8.8	2.4	2.2	8.6
Total Cereals	46.8*	43.6	50.0	59.2	57.1	55.8	9.0	6.5	53.3
Pulses	8.2*	8.4	9.2	10.6	10.9	11.0	2.8	1.0	9.2
Total Foodgrains	54.9*	52.0	59.2	69.8	68.0	66.8	11.9	7.7	62.6
Oilseeds	5.2	5.0	4.7	5.3	6.4	5.7	0.5	0.4	5.6
Sugarcane (*gur*)	5.7	6.2	5.1	4.4	5.9	6.1	0.4	0.7	6.4
Cotton (million bales)	2.9	3.1	3.2	3.9	4.2	3.9	1.0	1.4	4.3
Jute (million bales)	3.3	4.7	4.6	3.1	3.0	4.2	0.9	2.2	5.5
Index Number of Agricultural Production (Base 1949-50=100)	95.6	97.5	102.0	114.3	117.0	116.8			

* Base year refers to 1949-50.

Source: Estimates of Area, Production and Yield of Principal Crops in India. 1965-66 and 1966-67, Volume I (Summary Tables), Directorate of Economics and Statistics. Ministry of Food and Agriculture, Government of India, 1968 (mimeo.).

The Second Five-Year Plan (1956-61) was designed to secure a more rapid rate of growth in the economy. During the First Plan national income had grown by 18 per cent as compared to the initial estimate of 11 per cent. The Second Plan postulated an average rate of growth of 5 per cent per annum with an eye on a doubling of per capita incomes by 1973-74. To this end, aggregate investment was to be stepped up from about 7.3 per cent of national income in the First Plan period to about 10.7 per cent in the Second Plan—with further increases going up to a level of 17 per cent in the Fifth Plan. The Second Plan envisaged a large step-up of investment in industries, mining, power and transport. While the importance of agriculture was recognised and there was no overt under-emphasis on agriculture, there was a relative shift in priorities, the allocation of public sector outlays for agriculture, irrigation and allied heads in the Second Plan coming down to 20 per cent as compared to 31 per cent in the First Plan. The target for food production by the end of the Plan period was 81.8 million tonnes, that is, an increase of 22 per cent over the level achieved in 1955-56. Substantial increases in the output of commercial crops were also envisaged.

Table II shows the trends in agricultural production over the period of the Second Plan as compared to the targets in the Plan.

The index of agricultural production showed a rise of about 22 per cent over the period. The increase in foodgrains production was 15.1 million tonnes as compared to the target of 15 million tonnes. The output of sugarcane was substantially larger than had been envisaged in the Plan. On the other hand, there were serious shortfalls in cotton, oilseeds and jute. Although the overall performance of agriculture in the Second Plan might appear reasonably satisfactory, it has to be borne in mind that food shortages emerged at various stages during the Plan period, and it was almost a coincidence that the output of foodgrains in 1960-61 just exceeded the target by a small margin because of a particularly favourable monsoon. Foodgrains prices were on the upgrade over the major part of the Second Plan despite imports amounting to 18 million tonnes over the five-year period. The

TABLE II

AGRICULTURAL PRODUCTION : SECOND FIVE-YEAR PLAN

(*in million tonnes*)

	Production						Additional production in 1960-61 over 1955-56	Second Plan target	
	Base year 1955-56	1956-57	1957-58	1958-59	1959-60	1960-61		Addi-tional	Total
Rice	27.6	29.0	25.5	30.8	31.7	34.6	7.0	4.9	32.5
Wheat	8.8	9.4	8.0	10.0	10.3	11.0	2.2	2.9	11.7
Total Cereals	55.8	58.3	54.7	64.0	64.9	69.3	13.5	13.3	69.1
Pulses	11.0	11.6	9.6	13.1	11.8	12.7	1.7	1.7	12.7
Total Foodgrains	66.9	69.9	64.3	77.1	76.7	82.0	15.1	15.0	81.8
Oilseeds	5.7	6.4	6.4	7.3	6.6	7.0	1.3	2.0	7.7
Sugarcane (*gur*)	6.1	7.0	7.2	7.3	7.9	11.1	5.0	1.8	7.9
Cotton (million bales)	3.9	4.7	4.7	4.6	3.4	5.2	1.3	2.7	6.6
Jute (million bales)	4.2	4.3	4.0	5.2	4.5	4.1	—0.1	1.6	5.6
Index Number of Agricultural Production (Base 1949-50=100)	116.8	124.3	115.9	133.5	130.3	142.2			

Source: Estimates of Area, Production and Yield of Principal Crops in India, 1965-66 and 1966-67, Volume I (Summary Tables), *op. cit.*

goal of self-sufficiency in foodgrains seemed no nearer at the end of a decade of planning than it was at the beginning.

Over the ten-year period to 1960-61, fluctuations in agricultural output were sizable. While a comparison of figures as at the end of Plan periods is convenient for some purposes, it is not by itself an adequate measure of achievement. During the First Plan period, the year 1953-54 showed an increase of 10.6 million tonnes in food output, the output that year being 69.8 million tonnes. No one could seriously argue that this was due to the measures for agricultural improvement undertaken in the two previous years. The next two years showed a small decline. The foodgrains crop was back to 64.3 million tonnes in 1957-58. The two years thereafter again showed a rise to a level of around 77 million tonnes and the record of 82 million tonnes was reached only in 1960-61, the last year of the Second Plan. There was, undoubtedly, an upward trend in foodgrains production, but these fluctuations reduced average availabilities and affected the course of prices. In the first decade of planning, the major reliance was on extension of irrigation, the building up of community projects and a national extension service and a series of land reforms designed to eliminate functionless intermediaries and to vest the land in the tiller. These were, undoubtedly, important infrastructural developments, but they evidently did not provide the basis for sizable and sustained growth in agricultural output.[1]

AGRICULTURE IN THE THIRD PLAN

The main priorities in the Third Plan (1961-66) were broadly the same as those for the Second Plan. There was, in fact, an added emphasis on the progress of basic and capital goods industries designed to supply from within the country a significant pro-

1 *cf.* "In the chronology of Indian agricultural development policy, each new policy and the passage of time itself have successively uncovered new deficiencies. Thus, in serial fashion, a productive and successful programme evolved. It was necessary that the programme meet a set of complex policy objectives, of which increasing agricultural production was only one. Because the development of policy was such a pragmatic process, it is difficult to draw from it the specifics of successful agricultural development policy." John W. Mellor, *et. al.;* Developing Rural India—Plan and Practice, Cornell University Press, Ithaca, New York, 1968, p. 367.

portion of the machinery and equipment needed for ensuring high and rising levels of capital formation and of income growth in the succeeding Plans. The approach was summed up in the phrase 'self-reliant and self-sustaining growth.' This self-reliance could, of course, be achieved only over a period, but the objective was to shorten this period—even by relatively greater reliance on foreign aid for the immediate future. The concept of self-sustenance meant that foreign aid had to be dispensed with after a period without detriment to the investment effort; the idea was that the rate of domestic savings should have picked up sufficiently meanwhile to sustain from within the economy the needed tempo of capital formation. The resultant stress on basic and capital goods industries did not, however, mean that less attention could be paid to agriculture. The experience of the Second Plan had brought out quite clearly that the kind of development sought to be promoted under the scheme of priorities formulated in the Second Plan could not be seen through without substantial and continuing improvements in the performance of the agricultural sector.

The Third Plan, therefore, re-emphasized the high priority to be attached to agricultural programmes and raised the public sector allocations to agriculture, irrigation and allied heads to 23 per cent of the larger total outlay as compared to 20 per cent in the Second Plan. The difference in the Third Plan approach in this respect as compared to the earlier Plans is perhaps that, while the earlier Plans tended to view agriculture mainly from the point of view of satisfying the current needs for food consumption, there was added emphasis in the Third Plan on the role of the agricultural sector as the base for rapid industrial advance and as a substantial contributor to the much-needed foreign exchange resources for the Plan—both through increased export earnings and through import substitution. As the Third Plan document puts it: "In the scheme of development during the Third Plan, the first priority necessarily belongs to agriculture. Experience in the first two Plans, and especially in the Second, has shown that the rate of growth in agricultural production is one of the main limiting factors in the progress of the Indian economy. The guiding consideration is that whatever is physically practicable should be made

financially possible, and the potential of each area should be developed to the fullest extent possible."[2] The Third Plan placed as much emphasis on the building up of an adequate machinery for implementation of programmes as on the suitability or adequacy of the programmes as such. Table III sets out the targets and achievements in agricultural production for the period of the Third Plan.

The overall performance of agriculture was much below the target proposed in the Third Plan. In the first year of the Third Plan there was a small increase in agricultural production, but the second year recorded a decline. There was again, a small increase in agricultural output in the third year of the Plan and this was followed by bumper crops in 1964-65 when the index of agricultural production touched 158.5 and the output of foodgrains was 89 million tonnes. The last year of the Third Plan witnessed an unprecedented drought which resulted in a 16.3 per cent reduction in overall agricultural production as compared to the previous year. The decline in food production was 17 million tonnes and the situation had to be met by imports totalling the record figure of 10.4 million tonnes in that year.

The year 1966-67 was again a year of serious drought which accentuated the difficulties created by the previous year's failure of crops. The food output improved only marginally as compared to the previous year and other agricultural crops registered a slight decline. Further imports of foodgrains to the tune of 8.67 million tonnes became unavoidable.

Throughout the Third Plan period and particularly against the background of the two successive droughts, serious concern was felt regarding the appropriateness of the entire strategy of agricultural development. A number of questions were asked: Was there something basically wrong with the targets? Were the inputs envisaged for the achievement of those targets inadequate? Were the various programmes being implemented properly, and was there adequate co-ordination as between them? Above all, the question was repeatedly raised: Was the farmer getting ade-

2 Third Five-Year Plan, Planning Commission, Government of India (1961), p. 49.

TABLE III

AGRICULTURAL PRODUCTION : THIRD FIVE-YEAR PLAN

(*in million tonnes*)

	Production						Additional production in 1965-66 over 1960-61	Third Plan target	
	Base year 1960-61	1961-62	1962-63	1963-64	1964-65*	1965-66*		Addi-tional	Total
Rice	34.6	35.7	33.2	37.0	39.0	30.7	— 3.9	11.1	45.7
Wheat	11.0	12.1	10.8	9.9	12.3	10.4	— 0.6	4.2	15.2
Total Cereals	69.3	71.0	68.6	70.6	76.6	62.2	— 7.1	15.0	84.3
Pulses	12.7	11.8	11.5	10.1	12.4	9.8	— 2.9	4.6	17.3
Total Foodgrains	82.0	82.7	80.2	80.6	89.0	72.0	—10.0	19.6	101.6
Oilseeds	7.0	7.3	7.4	7.1	8.5	6.3	— 0.7	2.96	9.96
Sugarcane (*gur*)	11.1	10.6	9.3	10.5	12.0	12.1	+ 1.0	—	10.16
Cotton (million bales)	5.3	4.6	5.2	5.4	5.7	4.8	— 0.5	1.8	7.1
Jute (million bales)	4.1	6.4	5.4	6.1	6.0	4.5	— 0.4	2.2	6.3
Index Number of Agricultural Production (Base : 1949-50=100)	142.2	144.8	139.6	143.1	158.5	132.7			

* Partially revised estimate, subject to revision.

Source: Estimates of Area, Production and Yield of Principal Crops in India, 1965-66 and 1966-67, Volume I (Summary Tables), *op. cit.*

quate prices and did he have the right incentive to use the new inputs and to enlarge his outputs? These anxieties were reflected in the Third Plan Mid-Term Appraisal undertaken by the Planning Commission towards the end of 1963. The doubts and difficulties expressed in that document gathered further strength as a result of the experience of the two successive droughts just mentioned. Quite a few observers drew pessimistic conclusions not only about the effectiveness of agricultural planning but about the entire developmental effort in India.

THE NEW AGRICULTURAL STRATEGY

It is important in the above context to note that right from the beginning of the Third Plan there was determined search for a new agricultural strategy—some technique of making a decisive impact on agricultural output even if over limited areas. This was the basis of the intensive agricultural district programme (IADP) initiated in 1960-61 in three districts. The programme was subsequently expanded by stages to another 13 districts. The object of this programme was to try to meet as far as possible all the requirements of inputs in selected areas and to see how output responded to this type of effort. The results obtained varied a great deal from district to district but they brought out clearly the high effectiveness of a co-ordinated effort in achieving better results with agricultural production. The concept of a "package" of inputs and of appropriate supporting measures thus came to be established. From 1964-65 on, the programme now called the "Intensive Agricultural Area Programme" was extended to several parts of the country. Around this time, the techniques of raising hybrid seeds were proving a distinct success and the Mexican dwarf variety of wheat came to be introduced in some of the wheat growing areas. New types of paddy seeds were also introduced in 1965. Programmes of various high-yielding varieties (HYV) were extended to fairly large areas in 1966, and, by 1967-68 over 6 million hectares were brought within the purview of that programme. This high-yielding varieties programme has produced substantial results. The largest success has been with respect to wheat and paddy but maize, jowar and bajra have also been brought under the programme.

The agricultural situation took a decided turn for the better in 1967-68. The good rainfall of that year coupled with the progress made with the new techniques raised foodgrains output by about 29 per cent over the previous year which was some 7 per cent above the previous peak reached in 1964-65. The output of foodgrains that year was 95.6 million tonnes. Other important crops also showed improvement over the low levels of the previous two years but the performance in this respect has not been striking. In 1968-69, the level of food production was more or less maintained around the previous year's despite unsatisfactory rains in several parts of the country.

On the whole, as the Fourth Five-Year Plan (1969-74) Draft has put it, the period of eight years since the commencement of the Third Plan has been marked in the field of agriculture "by near disaster and much achievement."[3] The achievement reflected in the good crops of 1967-68 and 1968-69 has undoubtedly been due to the new and improved varieties of seed, the greatly increased availability of fertilizers and a co-ordinated effort to apply these inputs especially in areas with adequate irrigation facilities or assured rainfall.

At a time of rapid change, the trends in the coming years cannot be projected merely on the basis of past performance. At the same time, adequate care is necessary to ensure that the targets set are realistic. The major factor in favour of a more optimistic view on the performance of agriculture in the coming years is that already in several parts of the country substantially higher yields have been obtained as a result of the spread of new seed varieties and fertilizer, and that in the period of the Fourth Plan, massive increases of the new inputs are envisaged. A particularly hopeful feature of the situation is that the farmers almost all over the country are ready and anxious to avail themselves of the new techniques and facilities. There is a new stir in the countryside, a new receptivity to technical change which could result in large gains in productivity within a fairly short time. The commercial banking system has been oriented more effectively

3 Fourth Five-Year Plan 1969-74—Draft, Planning Commission. Government of India (1969), p. 106.

to meet the requirements of rural credit, short-term, medium-term as well as long-term. For years now, the immense "technological possibilities" of Indian agriculture have been talked about. But, now, as a result of the persistent effort over the past eight years or so to evolve and apply a new strategy for agricultural development, these possibilities have come within the range of practical realisation.

Table IV shows the increase in major and minor irrigation, in the consumption of fertilizers, in the distribution of hybrid seed and in the area covered by intensive development programmes in recent years.

THE GREEN REVOLUTION

Unquestionably, the better performance of agriculture in the last two years has changed the outlook in respect both of agricultural development and the capabilities of the economy as a whole over the coming years. The agricultural sector now seems poised for rapid advance in the coming years. The change in agricultural techniques that has taken place has often been referred to as the Green Revolution. One cannot but ask: is it legitimate to characterise what has occurred as anything like a revolution? The question is highly pertinent; for, a misreading of what has occurred could again create serious difficulties for the economy and result not only in imbalances and hardships but in a loss of confidence and morale. It is necessary, therefore, to set down in some detail the measure of changes or improvements that have occurred and to indicate the basis on which the projections of increased agricultural output in the Fourth Plan have been presented.

First of all, it is essential to underline the fact that the striking increase in output occurred only in 1967-68. The record prior to this has been so uneven that it is not possible yet confidently to assess the order of improvement in productivity we can legitimately assume on a continuing basis. For the period 1949-50 to 1964-65, the Planning Commission has estimated the increase in agricultural production to have been about 3.2 per cent per annum on an average—3 per cent in foodgrains and 3.6 per cent for non-foodgrains. Over one-half of this trend increase was on account of higher yields while the rest was because of an increase in area.

TABLE IV

TARGETS AND ACHIEVEMENTS OF AGRICULTURAL DEVELOPMENT PROGRAMMES DURING 1961-69

Programme	Third Plan (1961-66)		1966-67		1967-68		1968-69	
	Target	Achievement	Target	Achievement	Target	Achievement	Target	Anticipated achievement
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
. Major and medium irrigation (gross)—additional area benefited (million hectares)	5.2*	2.2*	—	—	—	—	0.9	0.7
2. Minor irrigation (gross)—additional area benefited (million hectares)	5.2*	5.21*	1.4	1.4	1.4	1.4	1.5	—
3. Consumption of chemical fertilizers:								
(*a*) Nitrogenous — in terms of nitrogen (N) (lakh tonnes)	10.2	6.0	10.0	8.4	13.5	10.35	17.0	14.0
(*b*) Phosphatic — in terms of P_2O_5 (lakh tonnes)	4.06	1.32	3.7	2.5	5.0	3.4	6.50	4.0
(*c*) Potassic — in terms of K_2O (lakh tonnes)	2.03	0.78	2.0	1.2	3.0	1.8	4.50	1.8

4. Coverage of improved/hybrid seeds of foodgrains (million hectares)	82.6	48.6	2.8§	1.9§	6.07§	6.04§	8.5§	—
5. Gross cropped area (million hectares) covered by								
(*a*) Intensive development programme	—	2.891†	—	3.173	—	3.2	—	—
(*b*) Intensive agricultural area programme	—	13.3†	—	—	—	—	—	—
(*c*) Multiple cropping programme	—	—	—	—	3.0	3.64	6.07	—

* Over 1960-61. § High-yielding varieties of improved seeds of foodgrains. † Relates to 1965-66.

N.B. : 1 hectare = 2.47109 acres.

Source : Indian Agriculture in Brief, Ninth Edition, Directorate of Economics and Statistics, Ministry of Food, Agriculture, Community Development and Co-operation, Government of India, 1968, pp. 172-177 and 183; Report 1967-68 and 1968-69, Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture), Government of India, 1968 and 1969; Report 1968-69, Ministry of Irrigation and Power, Government of India, 1969; India—A Reference Annual, 1968, Ministry of Information and Broadcasting, Government of India, 1968, p. 229; and Fourth Five-Year Plan 1969-74—Draft, *op. cit.*, pp. 5 and 184.

If we take the three years after 1964-65 also into account, the average annual rate of growth of agricultural output would work out to be around 2.5 per cent. These figures are by no means encouraging, and, indeed, leave much to be desired. It has also to be noted that increases in productivity rather than in area have to be relied on mainly for further increases in total agricultural output. Judged in this light, the increase of 4.5 to 5 per cent per annum in agricultural output projected in the Fourth Plan would appear to be on the high side.

What has happened is that a spectacular increase in wheat yields has taken place. Of the total estimated increase in foodgrains production between 1964-65 and 1967-68 on account of the high-yielding varieties programme, as much as two-thirds is attributable to wheat alone. The increases in productivity of millets and maize have been moderate and there has so far been little impact in the case of rice. The new programme has so far left more or less untouched the whole area of commercial crops an increase in some of which is as vital as in food supply. The major participants and beneficiaries of the new technology have been relatively substantial farmers. The small farmer has yet to come into the programme. In dry areas, there has as yet been no major break-through in research. A much larger proportion of the cultivated area under rice is accounted for by small holdings and the problem of transmitting the new technology to them and evolving suitable credit and other arrangements to assist is more difficult than in the case of the wheat areas covered so far.

On the whole, the appropriate assessment of the situation is that, while hopeful—highly hopeful—beginnings have been made in the direction of the much awaited break-through in agriculture, the country is still only on the threshold of an agricultural revolution. In other words, the revolution is still in the future and will have to be brought about by an active policy of promoting technological transformation adequately supported by institutional arrangements for supply and distribution of the new inputs as well as of credit and marketing facilities for the farmer. The significance of the development is that, while in the past the emphasis was on extension of irrigation, enlargement of credit facilities, the spread of agricultural extension services and the like, there was

no emphasis on newer farming techniques as such. The change that has occurred in this respect is of far-reaching importance. Over large parts of the country, the farmer is responding to the new technology and is indeed eager to avail himself of the new opportunities for improving the productivity of his farm and improving his level of incomes. A new and welcome process of transformation has thus begun and the important task now is to ensure that this good beginning is sustained and accelerated so as to secure a 5 per cent per annum rise in agricultural production as envisaged in the Fourth Plan. The point to note is that this order of increase per year is about twice as high as the trend rates recorded since the beginning of planning.

Table V sets out the targets of production in the Fourth Plan.

TABLE V

TARGETS OF PRODUCTION IN THE FOURTH PLAN

Commodity	Base level production	Target of additional production: 1969-74	Estimated production in 1973-74	Percentage increase
Foodgrains (million tonnes)	98	31	129	31.6
Oilseeds (million tonnes)	8.5	2	10.5	24
Sugarcane (*gur*) (million tonnes)	12	3	15	25
Cotton (million bales)	6	2	8	33
Jute (million bales)	6.2	1.2	7.4	19
Tobacco (million kgs.)	380	100	480	26
Coconut (million nuts)	5.600	1,000	6,600	18
Arecanut (thousand tons)	126	24	150	19
Cashewnut (thousand tons)	160	76	236	48
Pepper (thousand tons)	23	19	42	83
Lac (thousand tons)	35	17	52	49

Source: Fourth Five-Year Plan 1969-74—Draft, *op. cit.*, p. 137.

To achieve these increases, the area under IAD and HYV programmes is to be increased from 8.5 million hectares in 1968-69 to 24.1 million hectares at the end of the Fourth Plan. Seed multiplication and distribution will be taken in hand on a much larger scale. Fertilizer consumption, which is at present about 1.4 million tonnes of N, 0.4 million tonnes of P_2O_5 and 0.2 million tonnes of K_2O will go up to 3.7 million tonnes of N, 1.8 million tonnes of P_2O_5 and 1.1 million tonnes K_2O by the end of the Fourth Plan. Programmes of minor irrigation, soil conservation, plant protection and the like are also being greatly strengthened. The multiple cropping programme, initiated in 1967-68, is to be expanded to cover an additional 9 million hectares. Table VI shows the targets of the high-yielding varieties programme and other selected development programmes for the Fourth Plan.

TABLE VI

AGRICULTURAL DEVELOPMENT PROGRAMME IN THE FOURTH PLAN

	Additional area to be covered (million hectares)
High-yielding varieties programme	15.6
Multiple cropping	9.0
Soil conservation	5.6
Land reclamation	1.0
Major and medium irrigation (utilisation)	4.2
Minor irrigation:	
New area	3.2
Replacement of depreciated area	1.6
Supplemental irrigation (stabilisation)	2.4

Source: Fourth Five-Year Plan 1969-74—Draft, *op. cit.*, p. 114.

The major task of the Fourth Plan is, in short, to accelerate the process of technological transformation of agriculture that has been initiated over the last three years or so. To this end, it will be necessary to ensure that the inputs of seed, fertilizers and water as well as improved tools and equipment are available in requisite amounts. This, in turn, involves both adequate production as well as efficient distribution programmes.

REORIENTATION OF AGRICULTURAL CREDIT

The developments envisaged in the agricultural sector during the Fourth Plan and thereafter will necessitate a large expansion of credit facilities in that sector, and it is appropriate in this context to review here the strengthening and reorientation of the system of agricultural finance that has been undertaken, first under the scheme of social control of banking, and now under the scheme of nationalised commercial banking. It is certainly not just accidental that these new moves in the banking field have come precisely when traditional agriculture has been breaking out of its old shackles. The need for new initiatives on the part of commercial banks has been evident for some time, and this is the essential objective both of social control and of nationalisation.

Since the initiation of the scheme of social control over banks towards the end of 1967, the National Credit Council and the Reserve Bank of India have endeavoured to find ways and means of bridging the large credit gap that is emerging in the rural areas against the new technological developments associated with the onset of the Green Revolution. For fertilizers alone, the credit needs by 1973-74 are estimated at Rs. 650 crores a year. A great deal of investment, both by public agencies and by the rural community, will be needed in minor irrigation, supply of power, installation of pumpsets, land improvement and the like. These problems have been mapped out in a recent comprehensive report by the Venkatappiah Committee appointed by the Governor of the Reserve Bank in July, 1966 "to review the supply of rural credit in the context of the Fourth Five-Year Plan generally and, in particular, of the requirements of the intensive programmes of agricultural production in different parts of the country." The requirements of short-term production credit for agri-

culture are expected to reach a level of Rs. 2,000 crores a year by 1973-74. About Rs. 500 crores will be needed in the form of medium-term credit over the next five years and about Rs. 1,500 crores will have to be found for long-term investment credit over the same period. The Reserve Bank's assistance in the shape of short-term credit to the apex institutions will have to be increased. More of term financing through the Agricultural Refinance Corporation will have to be undertaken. Nevertheless, it is evident that the co-operative credit system cannot cope with the demands just mentioned. A major departure from past practice necessitated by this realisation is that the commercial banks have now been assigned an active role in the financing of agriculture. Such financing by them, together with an aggressive programme for branch expansion in the rural areas was an integral part of the scheme of social control over banking. With the nationalisation of 14 commercial banks recently, the public sector in banking now covers over 80 per cent of the total deposits and advances of commercial banks. With this organisational change, the commercial banks will be called upon to proceed even faster with their efforts to channel more funds to the rural sector—and, as an inevitable corollary, if, indeed not as a condition precedent, to mobilise rural savings more effectively. This latter is crucial for successful financing of the growing needs of the rural sector, even allowing for some surplus funds from the urban areas becoming available for lending in the rural areas.

The organisational tasks involved in making the commercial banks an effective agency for mobilising rural deposits and disbursing credit to farmers and other small producers in the rural areas are immense. The co-ordination of the activities of commercial and co-operative agencies operating in the same field will also raise difficult problems of organisation and procedure. The point to stress is that only to the extent these problems are solved and difficulties met can the progress of the Green Revolution and the new trend towards linking up the rural economy with the technologically and financially more advanced urban economy be effectively assured.

CHAPTER XX

THE INDIAN RURAL PROBLEM: REVIEW AND PERSPECTIVE

The varied and complex problems of India's rural economy have been portrayed and analysed in the previous chapters in their historical setting. Policy changes from time to time and the responses of the rural economy to them have also been discussed. It is proposed in this chapter to present a synoptic view of the Indian rural problem as it confronts us as we enter the decade of the 'seventies and to sketch briefly the direction of effort and of policies that will be needed in order to consolidate and accelerate the gains from the technological transformation of agriculture that has recently commenced.

THE DEVELOPMENTAL IMPULSE

The Indian rural economy has changed a great deal over the last two decades. It can no longer be characterised as static. The three successive Five-Year Plans reviewed in the last chapter have strengthened and improved the infrastructure for agricultural development. Despite ups and downs, agricultural production has been on the uptrend. In recent years, the farmers have taken increasingly to new inputs and improved production techniques. A number of institutional changes have been initiated and implemented. The progress that has thus been achieved in raising agricultural productivity and improving the levels of living in the rural areas can rightly be regarded as significant—both in itself and as an indicator of the further potential for the future. The decade of the 'sixties was one of unusual difficulties in the agricultural sector, but it was also during this decade that the foundations of the "Green Revolution" were laid.

In so far as the developmental impulse has spread to the rural areas, Indian agriculture and the rural economy can be said to be poised for more rapid advances in the coming years.

The "demonstration effect" of the results achieved by the progressive farmers can be far-reaching, if an organised effort is made to bring newer strata of farmers within the scope of intensive development. Given this effort, the Fourth Plan target of a 5 per cent annual growth rate in agricultural output is by no means over-ambitious. But, the Indian rural problem is still very much a *Problem*: the dynamic upsurge is still limited in scope and intensity and many structural and institutional impediments will need to be overcome.

POPULATION AND ECONOMIC GROWTH

The major problem of Indian agriculture has been one of securing larger yields despite a worsening man-land ratio. This ratio has progressively worsened with the increase in population from 2.47 persons per hectare of cultivable area to around 3.6 at present; in another 10 years' time the ratio is expected to rise to around 4.4. The situation calls for substantial increases in productivity, through intensive farming backed by irrigation and modern scientific inputs.

This problem of population pressure is not the old Malthusian one of population verses food supply and the dangers of widespread starvation, pestilence and high death rates mowing down the "surplus" population from time to time. Death rates in India have fallen and are expected to fall further. During the last 20 years, food supply has kept pace with the growth of population, although the race between the two has been a close one. India's population is currently around 550 million. With all the effort for family planning, it is still expected to grow at a rate of 2.5 per cent per annum for another decade. The growth rate is expected to decline to 1.7 per cent by 1980-81. This means that by the end of the 'seventies, India's population will be around 630 million, and will reach 698 million by 1980-81. The objective of development is not just to ensure survival; it is to raise living standards and to make agriculture capable of producing more food and more raw materials for the rising needs of consumption, for meeting the raw material requirements of developing industries, for import reduction and for exports. Agriculture can fill its role in a developing economy only if productivity rises much faster than population.

Undoubtedly, the process of urbanisation will accelerate. That, in turn, will aggravate the problems of overcrowding, water supply and the provision of other basic facilities in the large cities and towns. Those problems apart, the outlook for the rural sector for the foreseeable future ahead is one of continuing additions to the labour force, more pressure on land and greater need for diversification and enlargement of employment opportunities. With the adoption of multiple cropping and the use of fertilizers, demand for labour in the rural areas may increase. That might give some relief, but over a period more employment opportunities will have to be created through animal husbandry, dairy farming and a wide range of agro-industries. Unless all classes of the rural society are thus able to raise their incomes and living standards, rural discontent could grow in a situation of this kind.

The practical import of all this is that the Indian rural problem cannot be viewed in isolation from that of developments in the economy as a whole. *From one end, the problem is of limiting the growth of numbers and thereby keeping down the* number of fresh entrants into the labour force. Population control is thus an essential condition for the containment of poverty and stagnation. At the same time, the other end, *viz.*, the development of *all* sectors of the economy at an adequate rate, has to be looked after. If the pressure of surplus labour on agriculture is to be held down, even if not actually reduced, the rate of growth of employment in sectors other than agriculture must be raised. That, in turn, depends upon the overall levels of investment the economy can sustain. If non-agricultural employment increases, say, at the same rate as industrial output, *i.e.*, about 10 per cent per annum, this still affords little relief to agriculture, since it employs 70 per cent of the total labour force.

STRUCTURAL ASPECTS

In assessing the prospects of Indian agriculture, certain structural limitations will have to be got over to the extent possible. Firstly, it is evident, as stated above, that the operative size of farms will remain small. The traditional answer to this is co-operative farming. But, if experience is any guide, one just cannot hope that the economies of scale can be secured over any wide

area along those lines. It follows that the accent of policy in this regard will have to be on co-operative supply of the needed inputs, including seed, fertilizer and implements and co-operative marketing of agricultural products. Even here, there is need to be realistic. The fields just mentioned are very large, and they cannot fully be covered by co-operatives. Commercial agencies will also have to come into them. So, the second point to stress is that the approach in terms of one type of institutions and agencies for the rural areas and another for the urban areas will have to be given up. More and more, agriculture as well as rural industries have to be treated on par with productive units and enterprises in the urban areas and this whole sector, hitherto regarded as separate and different from the modernised sector, will have to come in line with developments in the rest of the economy. Japanese agriculture, faced with similar problems, evolved along these lines and it seems reasonable to assume that the pattern of Indian agriculture will in time approximate that pattern.

LAND REFORM

A major thesis of this book has been that a far-reaching overhaul of the land system is essential for reorganising rural society on a more efficient and equitable basis. In this respect considerable progress has been made over the last two decades. Legislation pertaining to all facets of the agrarian economy has been enacted. Intermediary tenures which at one time covered some 40 per cent of the cultivated area have been abolished. As a result about 200 million tenants of former intermediaries have come into direct relationship with the State and have become owners of their land. Progress has been made in providing security of tenure to tenants-at-will in the *ryotwari* areas and sub-tenants in the *zamindari* areas. In consequence, some 3 million tenants and share-croppers have acquired ownership rights over about 7 million acres of land. Nevertheless, vestiges of the old system still remain. Given the basic scarcity of land and the lack of alternative employment opportunities, informal tenancy, share-cropping and high rents cannot but persist, and evictions often take the form of voluntary surrenders. These problems are still acute in some parts of the country. For some years past, the question has been asked whether land ownership could not be

made more even through redistribution of " surplus" lands above prescribed ceilings. Most States have enacted legislation to this end, but the legislation has been implemented only tardily. In any case, not much relief to the small holders or landless labourers can be expected from such redistribution of "excess" land. While, thus, land reform along the lines already chalked out will have to be completed, this can no longer be regarded as a major element in the reorientation of agriculture to the emerging needs of the economy in the coming years.

LAND TAXATION AND SAVINGS

Nor is land revenue any longer an oppressive burden on the farmer. The situation in this respect has suffered a sea-change. Land revenue is now only a small proportion of agricultural incomes. From some 17 per cent of the States' tax receipts in 1951-52, it has now come down to around 6 per cent. The agricultural income-tax, levied by several States, brings in only around Rs. 12 crores, which is a negligible amount. The incidence of indirect taxes like customs duties, excises, and sales taxes also falls more heavily on the urban classes. With the rise in agricultural output and in the prices of foodgrains and agricultural raw materials, the middle and large farmers are distinctly better off. This additional taxable capacity has not been adequately drawn upon. The marginal rate of taxation for the rural sector, that is, the proportion of the increased incomes taken away by taxation, has been smaller than for the urban areas. There have been large public sector outlays on irrigation and other types of infrastructure for agriculture over the last 20 years, and the pricing of some of these services contains a subsidy element. It is only proper that as development proceeds, the agricultural sector contributes a larger share to the investible pool of resources. The potential for taxation and saving will grow as agricultural productivity increases and incomes rise further. The problem is now one of devising suitable techniques of mobilising rural savings more effectively for meeting developmental needs. While the farmer will need more credit for the purchase of inputs, for installation of electrical or diesel pumps, for land improvement, etc., his capacity to save will rise progressively. The co-operative as well as commercial banks now in the process of moving forward

vigorously to fill the "credit gap" in the rural areas will have simultaneously to mobilise more deposit resources. Other forms of investment in financial assets, such as rural debentures, will also need to be popularised and pushed forward.

PRICING POLICY

A much-discussed problem in the context of agricultural planning is the formulation of a price policy that would raise rural incomes and provide an incentive to the farmer to increase output both through harder work and larger investment. Clearly, it cannot be said that the price incentive is inoperative in the agricultural sector and that the farmer produces what he can irrespective of profitability. It has been demonstrated repeatedly that the crop pattern varies from time to time in response to changes in prices and profitability. There is also an element of truth in the view that the recent improvement in yields (mainly of wheat) and the readiness of farmers to adopt improved farm practices and use newer inputs are a result of the sharp rises in the prices of food and other agricultural products that have taken place over the last five years or so. Yet, the very fact that yields have improved in respect of some, but not all, crops is itself indicative of the operations of other factors. A higher price for a particular product does result in higher output, but it does not follow from this that higher agricultural outputs can be secured all along the line by raising agricultural prices.

While there is a case for "reasonable" or "remunerative" prices for agricultural products, these are epithets that provide only a rough guideline. Actual policy adjustments from time to time have to take account of considerations affecting the whole economy. The consequences of rising food and raw material prices for the price structure as a whole and the accentuation of inflationary pressures in the result are too well known to need emphasis. There is scope in an orderly price policy for fixation of ceilings and floors to be operated with a view to evening out fluctuations and reducing the consequent instability of incomes. Essentially, however, the urge to larger output has to come from the improvement in income levels resulting from the gains in

productivity and these latter depend both on larger inputs and better farm management.

SOCIAL CHANGE

The raising of productivity, it must be stressed, is no simple or mechanistic process. The success of the new strategy of better inputs depends on availability of water, and the fact remains that a large proportion of the cultivated area still depends on the monsoon. Expansion of irrigation facilities, better utilisation of the potential already built up, more effective utilisation of ground and surface water have rightly been stressed as an integral part of the new agricultural strategy. The process of technological improvement has still affected principally the large farmers, and the need now is to reach out to the small farmers. Similarly, little advance has yet been made with regard to productivity in dry farming areas. In fact, this is a field in which intense research effort is needed before practical advice and assistance can be given to the farmers.

In the process of modernisation of agriculture much more than technology is involved. Improvements in productive techniques or even in technology of farm production in the wider sense are not adequate by themselves. These improvements have to be backed by institutional changes designed to eliminate the exploitative elements in the rural social structure (such as usurious moneylending or rack-renting or serfdom) and these changes, in turn, have to be supported by adequate educational facilities, reform of public administration and organisations to evoke the active participation of the rural community in the development programmes envisaged. No fragmented approach can bring about the economic and social transformation that is needed.

Such an integral view of the problem of rural uplift is implicit in the concept of 'planning from below,' the community development programme and the institution of the national extension service. Although the community development programme began well, and the national extension service held out high hopes initially, the actual results achieved have been far from satisfactory. In part, this may have been due to administrative or organisational

deficiencies, but in part it was also due to the non-homogeneous character of Indian rural society and the tendency of all new benefits to accrue, for some time at least, to the better off and more influential sections. Apart from the economic differentiation arising from land ownership, tenancy or landless status, there are differences and gradations of caste. The tradition-bound social hierarchy hinders economic and social mobility and acts as a barrier to durable, well organised community action. What is needed is both institutional and social change, and this can be achieved only through a massive educational effort backed by constructive leadership.

To sum up: The last two decades have brought the Indian rural economy to the threshold of the far-reaching transformation that is essential. But, the threshold has yet to be crossed. This is the task of the 'seventies—and, indeed, considering the dimensions of the problem and the rapid strides being made in science and technology, of the decades beyond. The problem in a somewhat wider setting has been discussed by Gunnar Myrdal in his monumental work "The Asian Drama" sub-titled "An Enquiry into the Poverty of Nations." He has rightly argued that the problems of development in this region cannot be solved in terms of the "Western" model—or any set model; that the approach will have to be in terms of social as well as institutional change; and that while expectations are rising fast, performance has still lagged behind. There, indeed, lies the challenge.

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